IMPERIAL OIL RESOURCES N.W.T. LTD.

2024 Aquatic Effects Monitoring Program Summary

Norman Wells Operations

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PROJECT 417085-54419-24200-EN-REP-00001 : 2024 Aquatic Effects Monitoring Program Summary- Norman Wells Operations					
Rev	Description	Originator	Reviewer	Worley Approver	Revision Date
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Plain Language Summary

Imperial Oil Resources N.W.T. Limited (Imperial) has retained Tłegǫ̀hłı Reclamation Services Advisian (TRSA) for the 2024 aquatic effects monitoring program on the Mackenzie River and Bosworth Creek in the vicinity of its Norman Wells Operations. The aquatic effects monitoring program activities in 2024 followed the methods outlined in the version most recently submitted to the Sathu Land and Water Board in December 2022 for review (Version 4). The objectives of the 2024 aquatic effects monitoring program are to:

- Determine if aquatic ecosystems and their uses are being adequately protected in the vicinity of Imperial's developmental activities;
- Determine the short-term and long-term changes on aquatic ecosystems that occur in conjunction with the construction and/or operation of Norman Wells Operation;
- Assess the efficacy of engineered controls that are used to minimize the effects of the project on aquatic ecosystems; and,
- Identify if there is a need for additional mitigation measures to reduce the influence of operations on aquatic ecosystems.

The 2024 aquatic effects monitoring program addresses these objectives through the execution of a surface water quality monitoring program using seasonal discrete (including winter) and passive sampling methods and an effects-based small-bodied fish study in Bosworth Creek. A large-bodied fish study was not included in the 2024 aquatic effects monitoring program; however, per direction received from the Sathu Land and Water Board in November 2023, Imperial continues to work with members of the community towards establishing an agreed upon large-bodied fish study to incorporate into the aquatic effects monitoring program in the future.

The surface water monitoring component of the aquatic effects monitoring program changed substantially in 2023 compared with previous years. This involved incorporating additional regional context to the program; however, several new sampling locations have limited historical data available as a result. Temporal trends were assessed for sites with existing historical data collected between 2017 and 2024. In addition, an upstream dataset describing background chemistry in the Mackenzie River was established using data from two sampling locations near 10-Mile Island (AEMP-US-02) and midway between Tulita and Norman Wells (AEMP-US-01). Subsequent years of the aquatic effects monitoring program will continue to build on this upstream dataset to provide more refined control limits for the monitoring program. Passive sampling devices, first deployed in 2023 at each sampling location, where semi-permeable membrane devices were used to measure polycyclic aromatic hydrocarbons (PAHs), and passive diffusion bags were used to measure petroleum hydrocarbons . These sampling devices were deployed for approximately 30 days to allow sufficient time for sorption (measurement) of these contaminants of potential concern. Comparisons with applicable water quality criteria and ionic composition are used to provide context for water chemistry of the Mackenzie River and Bosworth Creek.

Results from the surface water sampling program were compared to upper control limits (UCL) and lower control limits (LCL) established from sample locations upstream of Norman Wells as a representation of background chemistry (using upstream locations to define the natural water conditions). These limits have been established for the main parameters identified for Norman Wells Operation, known as Key Indicator Parameters (KIPs). Several total metal key indicator parameters including aluminum, arsenic, barium, cadmium, chromium, copper, iron, molybdenum, nickel, uranium, and zinc had concentrations above the upper control limits in July and August of 2024. Although few of these metals exceeded the upper control limits in 2023, most have historically exceeded the upper control limits during periods of higher flow in July and August. The control limits are an evolving dataset that will be updated to reflect changing upstream conditions. The total metal concentrations measured immediately upstream of Norman Wells in 2024 were similar to those at downstream sites that exceeded upper control limits . In addition, key indicator parameters also exceeded the upper control limits at the Imperial marine dock, Dehcho Island (Island 3), and immediately downstream from the facility. The concentrations across these locations remain below environmental quality guidelines.

Of the parameters outside of control limits in 2024, total aluminum, cadmium, chromium, copper, iron, and zinc exceeded federal environmental quality guidelines at one or more downstream sampling locations on the Mackenzie River. These parameters are also similarly above guidelines at upstream sampling locations, and are thus not believed to be enriched by Norman Wells Operations . No key indicator parameter concentrations exceeded these guidelines in Bosworth Creek; however, chloride, calcium, magnesium, sulphate, dissolved barium, dissolved copper, total dissolved solids, molybdenum, and nickel exceeded the upper control limits in 2024.

Increasing chloride concentrations have been measured in Bosworth Creek at upstream and downstream sites since about 2021. The source of this increase is considered to be upstream from Norman Wells Operations given that the magnitude of chloride concentrations are similar between upstream and downstream sites. This is supported by recent groundwater monitoring results near the central processing facility within Norman Wells Operations, which indicate lower chloride concentrations than that observed in Bosworth Creek. The maximum chloride concentration in Bosworth Creek to date is 39 mg/L, which remains below the federal water quality guideline for the protection of aquatic life (120 mg/L), however, increasing chloride concentrations (at both upstream and downstream of the facility) will require further analysis as data is collected in the future.

Time-integrated PAH and alkylated PAH (aPAH) concentrations have been calculated via semi-permeable membrane devices analysis. Models developed by the United States Geological Survey were used to estimate concentration in water for measured PAHs and aPAHs, where chemical-specific properties enable estimation. All PAH and aPAH concentrations quantified via semi-permeable membrane devices analysis were below the relevant guidelines, which is consistent with findings for previous PAH direct water sample analysis. However, semi-permeable membrane devices analyses did enable greater sensitivity (i.e. lower detection limits) for PAHs and aPAHs compared to direct water sample analyses. Improved resolution of PAH and aPAH concentrations from lower detection limits has enabled more detailed comparisons among near-field sites and

other monitoring locations on the Mackenzie River. Total PAH concentrations of near-field sampling locations were similar to those measured upstream and farther downstream at Fort Good Hope with the exception of samples obtained from the marine dock and former refinery sampling locations (i.e. locations with reduced flow and known natural seeps). The concentrations of specific PAHs and aPAHs were similar among upstream and downstream sampling locations on the Mackenzie River as well, suggesting no net change in PAH contributions to the river.

The small-bodied fish study began in 2023 using slimy sculpin (*Cottus cognatus*) as a sentinel species and fish were collected from two reaches within Bosworth Creek. A second reference site, farther upstream on Bosworth Creek was established in 2024 (AEMP-FS-03). Health of fish collected from the two reference sites upstream from Norman Wells operation (AEMP-FS-01 and AEMP-FS-03) was compared with fish from the sampling reach within Norman Wells operation (AEMP-FS-02). Endpoints and tissue analyses used for this component of the aquatic effects monitoring program used technical guidance for environmental effects monitoring for metal mining in Canada, and included:

- Fish condition (e.g. condition factor and length versus weight relationships);
- Energy allocation (e.g. liver and gonad size relative to body size);
- Expression of detoxification protein in liver (i.e. CYP1A1 enzyme content); and
- Tissue concentration characterization for metals and PAHs/aPAHs.

Fish health metrics were calculated for sexually mature individuals (i.e. capable of reproduction to ensure comparability) and several differences were documented between female and male sculpin from Bosworth Creek. Condition was higher in males from the downstream sampling reach but the percent difference (9.6%) was below the critical effect size of 10%, which is the action level threshold for this metric. Condition is dependent on the length and weight of individual fish, with higher body weights for fish of a given length indicating more energy availability and better health. Notably, the percent difference (8.3%) of average body weight after being adjusted based on the site-specific relationship between length and weight was also below the critical effect size. Liver weight relative to body size was higher in males from the downstream site, and the quantity of detoxifying protein was also elevated in males from the downstream site – though when matched with higher condition represents greater nutrient availability. The percent difference between sites for liver weight relative to body size (14.8% and 23.6%) remained below the critical effect size of 25% for this metric. This partially verified results observed during the 2023 aquatic effects monitoring program as per the environmental effects monitoring guidance given that percent differences were below the critical effect size in 2024. Tissue concentrations for key indicator parameters were not significantly higher in slimy sculpin from the downstream sampling reach, however, aluminum, arsenic, copper, and selenium concentrations were lower in female fish from the new reference site compared with the original reference site in 2024.

Results for PAH concentrations in slimy sculpin tissue from Bosworth Creek were similar to those observed in 2023. Total PAH concentrations, primarily driven by aPAH concentrations, were similar between sampling years. Slimy sculpin from the new reference site had a lower PAH concentration compared with the other two previously existing sampling locations in 2024. Carcinogenic PAHs are primarily below detection with only chrysene exceeding the detection limit at two sites in 2024. Consequently, the potential cancer risk calculated from slimy sculpin tissue residues are low in both 2023 and 2024.

The results of the 2024 aquatic effects monitoring program identified some values outside of control limits and/or exceeding water quality guidelines, however, these water chemistry exceedances are consistent with historical data and observed at both upstream and downstream sampling locations. The results from the fish tissue sampling program indicate that there are clear differences between males and females, and elevated liver size relative to body weight at the downstream site observed in 2023 was confirmed in 2024. This suggests more energy allocation to metabolic processes, which can include detoxification processes. Since fish condition is also higher at the downstream site, the increased energy allocation to the liver can be attributed to increased energy availability (i.e., nutrient enrichment) and does not appear to reduce overall fish health of slimy sculpin in Bosworth Creek. Despite these differences, tissue residue concentrations do not indicate higher contaminant concentrations at the downstream sampling reach.

Some spatial changes observed in 2023 were confirmed in 2024, however, these changes are below applicable critical effect size thresholds, and do not represent a loss in health or ability to adapt to changes in environmental conditions. Consequently, no changes to the small-bodied fish health study are recommended for the 2025 aquatic effects monitoring program . As part of the continued development of the aquatic effects monitoring program , the potential for combining fish health measurements across sampling years to improve statistical power should be discussed with Imperial, community members, and regulators. In addition, communication is ongoing to develop a large-bodied fish study component of the aquatic effects monitoring program , through continued participation by communities and regulators.

Glossary

Term	Description
Accumulated Environmental State (AES)	The existing state of the system as it has integrated all existing stressors, both natural and anthropogenic (human influence). In relation to the AEMP, the AES is focused on the aquatic environment including water quality and fish health
Adaptive Monitoring	An approach that responds to a potential effect by triggering confirmation steps which may include changing the frequency of monitoring and the extent and magnitude of monitoring. The process and steps that serve as a response framework in this document.
AEMP	Aquatic Effects Monitoring Program
ANOVA / ANCOVA	Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA) are parametric (meaning data structure must meet specific assumptions to ensure reliable comparisons) statistical tests for comparing means among two or more treatments (e.g. sites) to determine if results are likely to represent distinctly different populations. In the case of ANCOVA the effect of an additional variable (i.e. covariate) that influences the response variable is considered in the treatment comparison using a multiple linear regression approach.
Background Chemistry	The chemical characterization of substances or locations that are not influenced by releases from a site (USEPA 2002). This may represent the natural state of the environment or a state that has been influenced by other factors but not by the site in question.
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CCME FWAL	Canadian Council of Ministers of the Environment guidelines for the protection of freshwater aquatic life
CDWQG	Canadian Drinking Water Quality Guidelines – Maximum Acceptable Concentrations only
CES	Critical Effect Size is the difference between background and experimental site conditions before an action level is triggered to initiate the adaptive monitoring response framework. The critical effect size is variable dependent and based on existing knowledge of site conditions, as well as existing literature where published critical effect sizes are available.
CPF	Central Processing Facility – the main facility that processes oil at Norman Wells prior to shipment.
Control-Impact	Control-impact designs compare areas potentially affected with those that cannot be because of geographical location or sequence in time.
CPUE	Catch per Unit Effort is calculated by dividing the number of fish caught per the fishing unit for the respective fishing method used. For electrofishing the fishing effort is based on how many fish are caught per 100 seconds of fishing effort. For minnow trapping CPUE is determined based on the number of fish captured per hour that the trap is deployed.
EEM	Environmental Effects Monitoring
Enzyme-linked immunosorbent assay (ELISA)	Enzyme-linked immunosorbent assay refers to an analytical method used to measure concentrations of target proteins in biological tissues that use Horseradish Peroxidase (HRP) labelled antibodies bound to the target protein to measure concentration.
FEQG	Federal Environmental Quality Guidelines

Term	Description
GSI	Gonadosomatic Index is the ratio between gonad weight and body weight in fish and is often used as a measure of the energy/resources being put into reproductive development.
HSI	Hepatosomatic Index is the ratio between liver weight and body weight in fish and is often used as a measure of the energy/resources an animal is putting towards contaminant detoxification and the availability of energy stores (e.g. glycogen, lipids).
Imperial	Imperial Oil Resources N.W.T. Limited
KIPs	Key Indicator Parameters. Chemical and water quality parameters that have been identified as most applicable to the Site.
Large-bodied fish study (LFS)	A monitoring program focused on large-bodied fish species that are of value to local communities as a food source.
Low Action Level Threshold	Conditions that if exceeded would trigger the adaptive monitoring approach. The low action level is set at the critical effect size for a specific measurement endpoint to ensure that changes are detected and addressed in a proactive manner.
Mixed-Function Oxygenase (MFO)	A group of enzymatic proteins that are involved in the breakdown and removal of organic compounds.
mg/L	Milligrams per litre (parts per million)
mbgs	Metres below ground surface
masl	Metres above sea level
m^3/s	Cubic metres per second
µg/L	Micrograms per litre (parts per billion)
pg/l	Picograms per litre (part per trillion)
Norman Wells Operations (NWO)	The department within Imperial that is responsible for the operation and decision making associated with all well sites, flowlines, the central processing facility and maintenance activities.
PAHs/aPAHs	Polycyclic Aromatic Hydrocarbons/alkylated Polycyclic Aromatic Hydrocarbons
Passive Diffusion Bag (PDB)	A passive sampling device (PSD) used to capture organic compounds that are lighter (i.e. lower density) than air.
PI	Pyrogenic Index
Potency Equivalency Quotient (PEQ)	Overall carcinogenic potential of a mixture of PAHs found in environmental media measured in relation to Benzo(a)pyrene (BaP).
Potency Equivalency Factor (PEF)	Carcinogenic potency of individual PAHs with sufficient toxicological information relative to benzo(a)pyrene (BaP).
Performance Reference Compounds (PRCs)	Labelled PAH compounds spiked into triolein films before SPMD deployment to account for hydrocarbon degradation rate during deployment period.
Passive Sampling Device (PSD)	A sampling technology that sequesters and concentrates bioavailable organic compounds from the environment.
Semipermeable Membrane Device (SPMD)	A type of PSD used to capture and organic compounds. Their primary use is in surface water sampling for PAHs and PCBs over a period of time.
SETAC	Society of Environmental Toxicology and Chemistry is a world-wide professional organization of scientists, regulators, and academia dedicated to advancing environmental science and environmental management.
SLWB	Sahtu Land and Water Board

Term	Description
Small-bodied fish study (SFS)	A monitoring program focused on small fish that can act as a sensitive sentinel species and be indicative of the health of the wider ecosystem.
TRSA	Tłegǫ́hłı Reclamation Services Advisian
UCL / LCL	Upper control limit (UCL) and lower control limit (LCL) established around the mean concentrations of KIPs based on two-times the standard deviation which is used to identify the critical effect size.
WSC	Water Survey Canada

1. Introduction

Imperial Oil Resources N.W.T. Limited (Imperial) has retained Tłegǫ̀hłı̨ Reclamation Services Advisian (TRSA) to conduct an Aquatic Effects Monitoring Program (AEMP) to meet the requirements of their Water Licence (S13L1-007) issued by the Sahtu Land and Water Board (SLWB) for their Norman Wells Operation (NWO).

The NWO is owned by Imperial Oil and the Government of Canada and is operated by Imperial. NWO is an upstream oil and gas facility located approximately 700 km northwest of Yellowknife, Northwest Territories (NT) as shown on Figure 1. Operations include a central processing facility (CPF), which receives production from the mainland, along the north-eastern shore of the Mackenzie River, natural islands (Goose Island, Bear Island, and Frenchy's Island), and six artificial islands.

The AEMP is informed by the *Guidelines for Designing and Implementing Aquatic Effects Monitoring Program for Development Projects in the Northwest Territories* (MacDonald and Zajdlik, 2009) and, as of 2024, includes assessment of water quality upstream, near facility and downstream from the NWO in the Mackenzie River. In addition, water quality and small-bodied fish health upstream, near facility and downstream from the NWO in Bosworth Creek is incorporated into the AEMP. The current scope of the monitoring activities reflects the revised Mackenzie Valley Land and Water Board's and Government of the Northwest Territories *Guidelines for Aquatic Effects Monitoring Programs* (MWVLWB and GNWT, 2019) to:

- Determine if aquatic ecosystems and their uses are being adequately protected in the vicinity of development activities;
- Determine the short-term and long-term changes on aquatic ecosystems that occur in conjunction with the construction and/or operation of NWO;
- Assess the efficacy of engineered controls that are used to minimize the effects of the project on aquatic ecosystems; and,
- Identify if there is a need for additional impact mitigation measures to reduce the influence of operations on aquatic ecosystems.

Although NWO has been operating, in various states, since the 1920's and is not a new development, the AEMP must be designed to monitor potential changes to the aquatic environment from the current and historical activities at NWO. Some elements of AEMP design, such as evaluating predictions of impacts on the ecosystem, are not incorporated as no pre-disturbance environmental impact assessments were completed.

Limitations of liability, scope of report and third-party reliance are provided in Appendix A.

1.1 Background

Surface water quality monitoring on the Mackenzie River and Bosworth Creek upstream and downstream of NWO has been conducted throughout the open water season since 2017 and has been tied the AEMP plans submitted to the SLWB. To date, no SLWB-approved version of the AEMP exists and the program has evolved as changes to the plan have been suggested. The work completed in 2024, and reported herein, reflects a plan currently in development. This plan incorporates direction received from the SLWB by Imperial.

Prior to 2023, the AEMP was limited to surface water grab sampling and analysis within the Mackenzie River and Bosworth Creek during spring, summer and autumn; changes implemented in the developing plan include the following:

- Revised and additional sampling locations intended to provide assessment of the accumulated environmental state (AES) as opposed to direct sampling of contributions to the environment;
    - Monitoring near potential input locations did not provide detectable changes, which may be attributable to the lack of contaminant load contributions and/or dilution within the receiving environment. AES monitoring is intended to capture overall changes to the aquatic environment near NWO that are potentially attributable to the operation.
- Addition of under ice sampling in winter, during seasonal low flow conditions of the Mackenzie River;
    - Field investigations have not encountered flowing water in Bosworth Creek in the winter.
- Use of passive sampling devices (PSDs) for water analysis of petroleum hydrocarbons and polycyclic aromatic hydrocarbons (PAHs); and
- Addition of a small-bodied fish study (SFS) in Bosworth Creek.

Investigations into the feasibility of establishing a SFS program in the mainstem of the Mackenzie River have been included in the execution of the AEMP in 2022 and 2023. Sampling efforts for small-bodied species have recorded low catch rates for potential sentinel species that would not be sufficient to meet target sample sizes in the mainstem. The 2024 AEMP therefore focused on the SFS program in Bosworth Creek to investigate potential local effects from the NWO. A large-bodied fish study (LFS) was not included in 2024; the program is currently (at time of writing) in development by Imperial, the SLWB and local communities, and will be incorporated into AEMP Version 5.

2. Norman Wells Oilfield Site Description

2.1 Site Location and Description of Operations

Imperial produces oil from wells drilled in the vicinity of the Town of Norman Wells. The oil-bearing reservoir lies largely under the Mackenzie River at depths ranging from 320 metres below ground surface (mbgs) to 625 mbgs. Within the operation, there are active production and injection wells connected through a flowline network to the CPF.

Producing wells are located on the Mainland, the Natural Islands (Goose, Bear, and Frenchy's), and the Artificial Islands (1-Rayuka, 2-Rampart, 3-Dehcho, 4-Ekwe, 5-Iteh K'ee and 6-Little Bear; Figure 1). Crude oil production is received at the CPF, where it is processed for shipment via the Enbridge pipeline to Alberta. No refining is conducted on-site (Imperial 2019).

2.2 Topography

The NWO is predominantly on the north shore of the Mackenzie River. Elevations range from approximately 50 to 70 metres above sea level (masl). The river flows in a west-northwesterly direction past the Town of Norman Wells. The valley within which this major river flows is bounded on the south by the Mackenzie Mountains and on the north by the Franklin Mountains (Imperial 2019).

2.3 Permafrost

The presence of discontinuous permafrost in the area influences local groundwater flow patterns. Ice lenses and the low conductivity associated with frozen soil in the subsurface act as barriers to groundwater movement. Two groundwater bearing intervals have been identified in the NWO area: a shallow discontinuous interval and a deeper unconfined interval.

Norman Wells lies in a zone of discontinuous permafrost, where typical maximum permafrost thickness ranges from 50 to 65 m. Permafrost in the Norman Wells area is not uncommon and is regularly encountered at the Imperial site beneath roads and other locations (Imperial 2019).

2.4 Natural Seepage

The presence of natural hydrocarbon seeps in the Sahtu Settlement Area, especially around the Town of Norman Wells, is known to predate Imperial's operation. Many natural oil and gas seeps have been documented in the lower Mackenzie River Valley.

Natural oil and gas seepage continues to occur along the shoreline and below the riverbed in several locations. The surficial seeps are most visible at these specific locations:

- Along the Mackenzie shore upstream and downstream of the former Refinery area;
- Within the Bosworth Creek delta area;

- Along the Mackenzie shoreline below the F-28X well;
- At Seepage Lake (between the Former Refinery area and Bosworth Creek); and
- In Bosworth Creek downstream of where the winter road crosses the creek.

The presence of seeps has led to a natural source of hydrocarbons in the groundwater and surface water at the Imperial site (Imperial 2019).

2.5 Mackenzie River

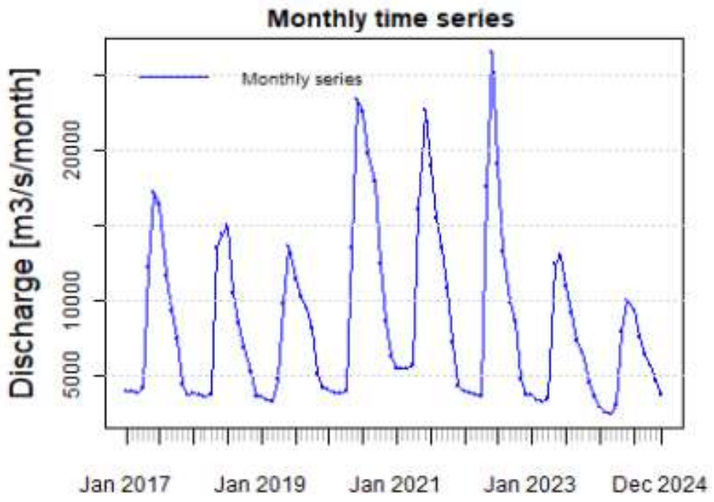
The Mackenzie River drainage basin is the largest river basin in Canada and the tenth largest river basin in the world. The Mackenzie River system flows roughly 4,200 km from the headwaters of the Athabasca River in the Columbia icefield in Jasper National Park, Alberta, and the snowfields of the upper Peace River headlands in northeastern British Columbia to its final destination at the Beaufort Sea of the NT (MRBB 2004). The river empties a volume of approximately 10,000 cubic metres per second (m^3/s) into the Beaufort Sea of the Arctic Ocean along the Mackenzie River delta, accounting for 60% of the freshwater that flows into the Arctic Ocean from Canada and about 9% of the freshwater discharged to all the oceans by all Canadian watersheds (MRBB 2004).

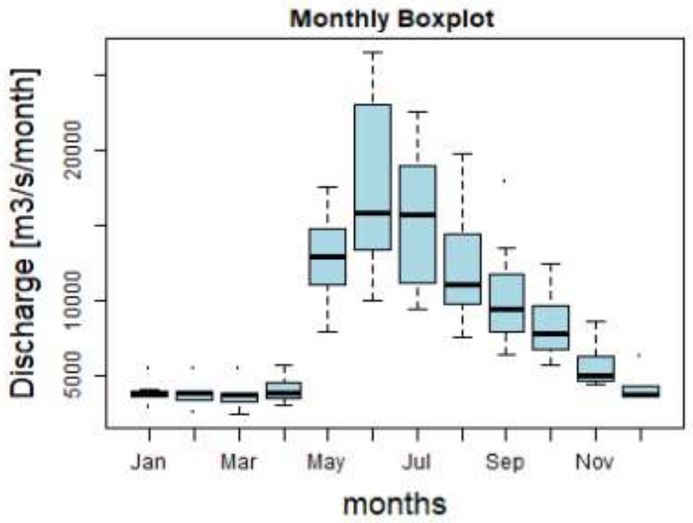
The water levels in the Mackenzie River at Norman Wells are variable throughout the year. Typical levels are approximately 41 masl during the winter, with short-term peaks of up to 51 masl (Komex 1980). Breakup of the Mackenzie River ice at Norman Wells usually occurs over a two-week period in May, and freeze-up typically occurs during a three-week period in October – November. The ice thickness of the Mackenzie River usually ranges from 1 to 1.5 m. The variability of flows that can be encountered during a month can be extreme, especially during the spring melt. For instance, flows recorded during the month of July (1962 – 2024) have ranged from 8,450 m^3/s to 33,300 m^3/s. The lowest recorded daily flow between 1962 and 2020 was 1,680 m^3/s on November 21-22, 1990. The largest recorded daily flow for the same time-period was 33,300 m^3/s on July 4, 1988 (WSC 2025a). Seasonal discharge historically measured at the Water Survey of Canada (WSC) station at Norman Wells (Station No. 10KA001) during the AEMP (2017 to 2024) is illustrated in Figure 2-1. Flows in the Mackenzie River were relatively high between 2020 and 2022, however, flow in 2023 and 2024 was reduced compared with previous years of the AEMP. Flow in the Mackenzie River in 2024 was the lowest documented since the AEMP began in 2017 (Figure 2-1).

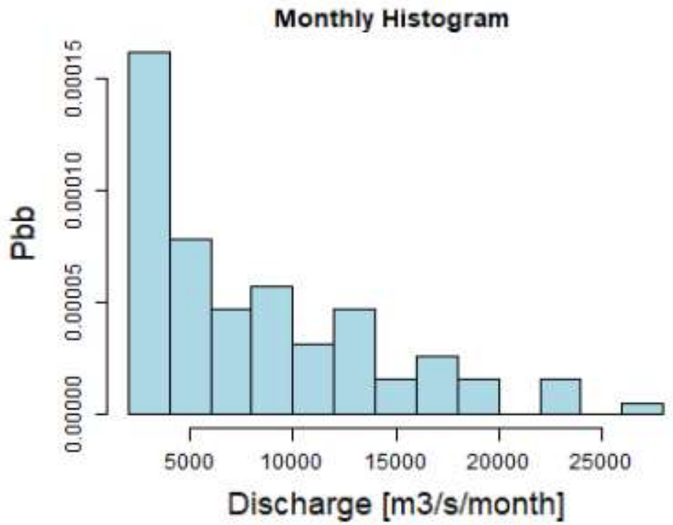
2.6 Bosworth Creek

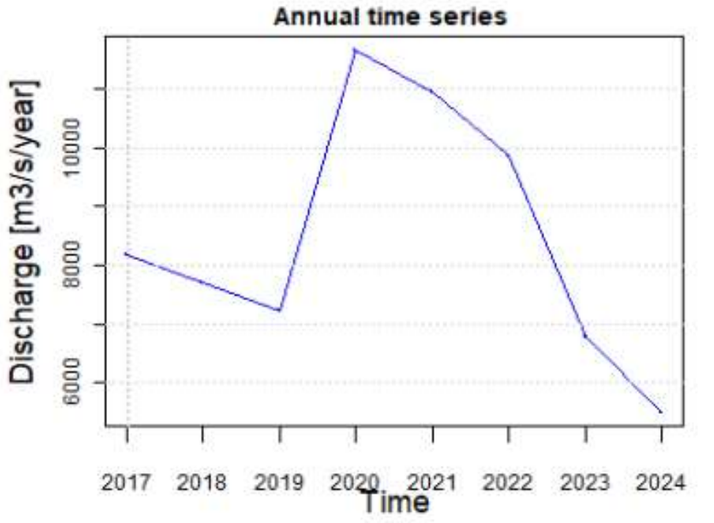
Bosworth Creek is an important local landscape feature used by residents and tourists for recreation. Bosworth Creek drains a small watershed of approximately 125 km^2 north and east of the Town of Norman Wells. The headwaters of Bosworth Creek is Hodgson (Jackfish) Lake located 9 km east at an elevation of approximately 250 masl (190 m above the NWO). Bosworth Creek flows northwest from Hodgson Lake for approximately 8 km, then southwest approximately 7 km through the NWO before draining into the Mackenzie River (Collins et al., 2011).

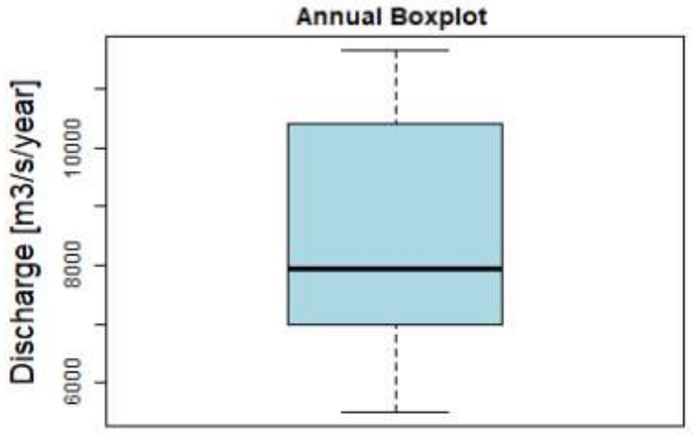
Seasonal habitat surveys were completed for Bosworth Creek as part of the Mackenzie Gas Project in 2002. Wetted channel widths along the stream ranged from 3.5 m to 16 m and habitat was primarily riffle, with most of the remainder composed of shallow and moderate depth run habitat. Coarse gravel and cobble predominated in most habitat types. Unstable or slumping banks were common, with banks showing signs of erosion at high flow (Imperial, 2019). Seasonal flow in Bosworth Creek historically measured at the WSC station near Norman Wells (Station No. 10KA007) during the AEMP is summarized in Figure 2-2 (WSC 2025b). Like the Mackenzie River, Bosworth Creek had the lowest flows observed since 2017 during the 2024 AEMP (Figure 2-2).

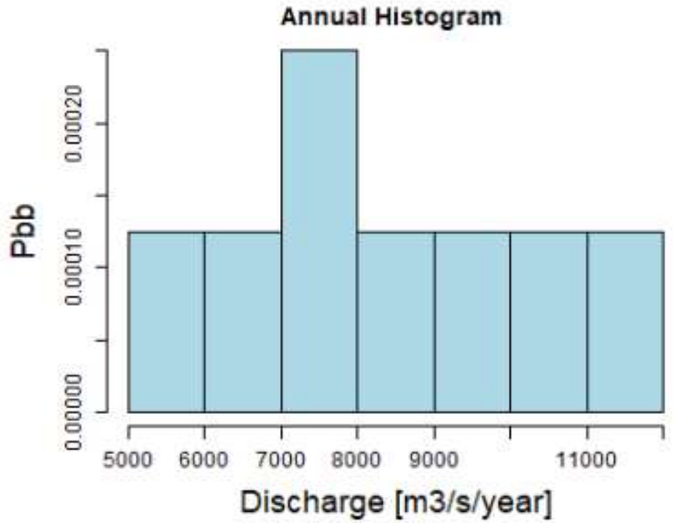












Notes:
Top row of figures summarize average monthly flow characteristics between 2017 and 2024 and the bottom row summarizes annual flow characteristics.
Box plots in the middle column provide the median discharge (thick horizontal line), upper and lower quantiles (limits of each box), and minimum/maximum discharges (error bars outside of each box) for each corresponding category.
Pbb = probability of measuring a given range of discharges at the site between 2017 and 2024.

IMPERIAL
AQUATIC EFFECTS MONITORING PROGRAM
NORMAN WELLS, NT

MACKENZIE RIVER AT NORMAN WELLS (STATION 10KA001)
DISCHARGE SUMMARY (2017 TO 2024)

Date : 13-MAR-2025	Drawn by: GY	Edited by: NT	App'd by: CM

Worley Project No. 417085-54419-24200

FIGURE: 2-1 REV A

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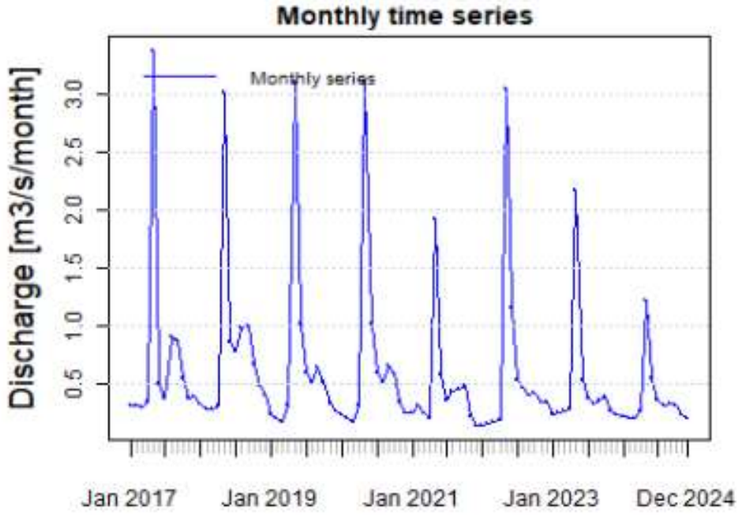

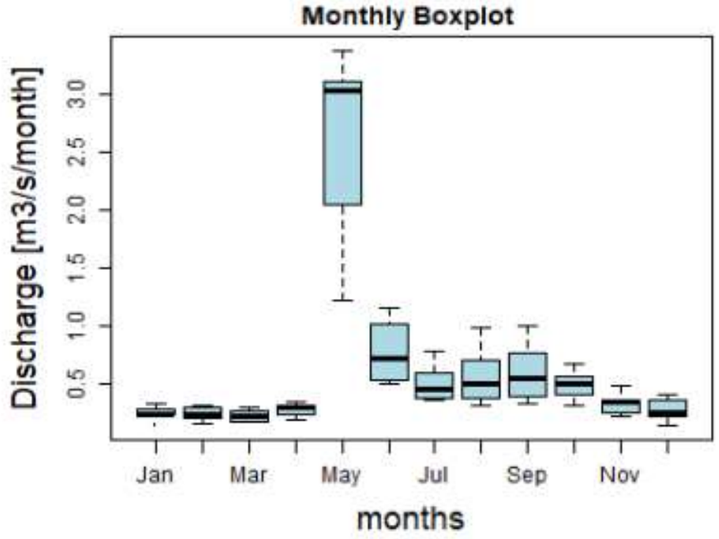

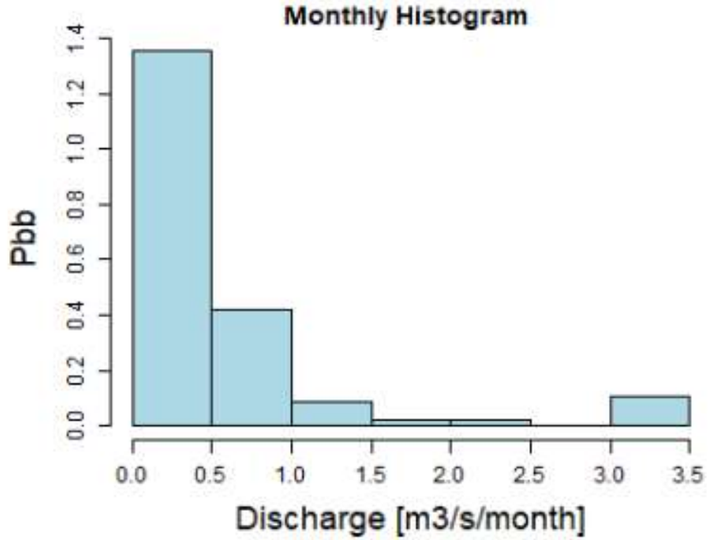

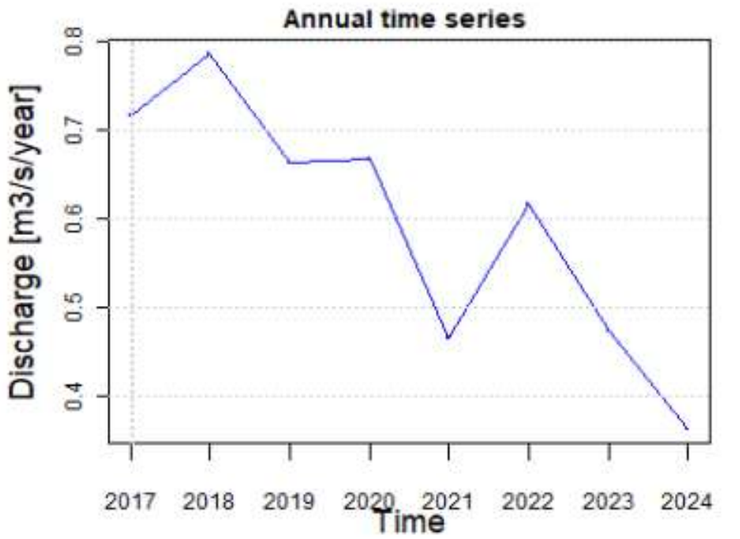

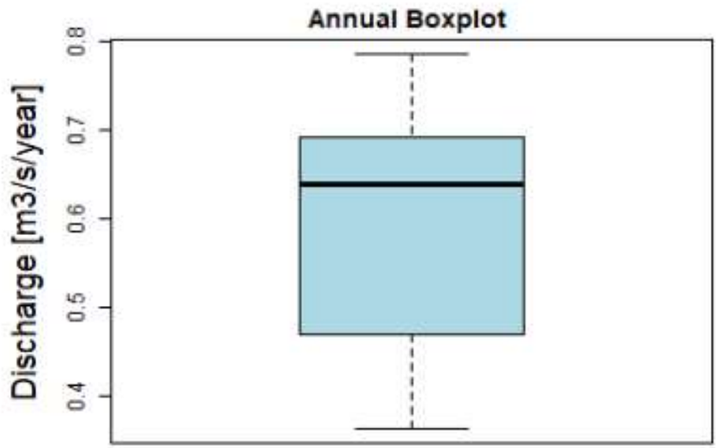

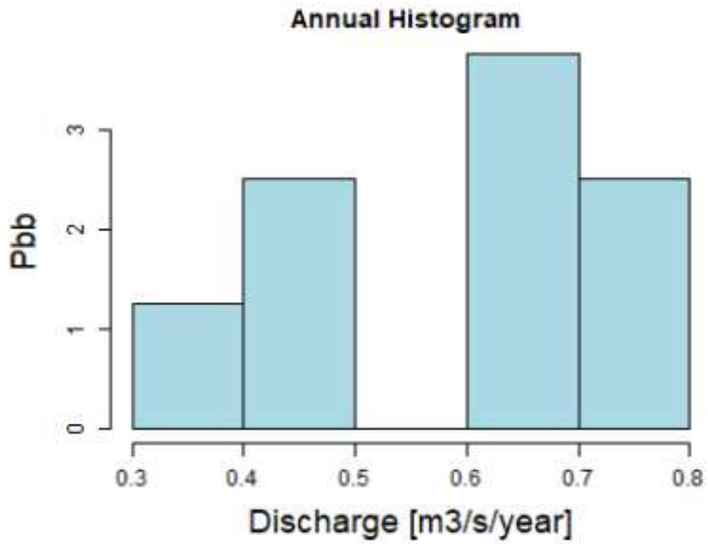

Notes:
Top row of figures summarize monthly flow characteristics between 2017 and 2024 and the bottom row summarizes annual flow characteristics.
Box plots in the middle column provide the median discharge (thick horizontal line), upper and lower quantiles (limits of each box), and minimum/maximum discharges (error bars outside of each box) for each corresponding category.
Pbb = probability of measuring a given range of discharges at the site between 2017 and 2024.

IMPERIAL
AQUATIC EFFECTS MONITORING PROGRAM
NORMAN WELLS, NT

BOSWORTH CREEK NEAR NORMAN WELLS (STATION 10KA007)
DISCHARGE SUMMARY (2017 TO 2024)

Date : 13-MAR-2025	Drawn by: GY	Edited by: NT	App'd by: CM

Worley Project No. 417085-54419-24200

FIGURE: 2-2 REV A

FILE LOCATION: U:\CAL\GBS\417011-00046\20100\12.0_Reports\12.3_Backend\417011-00046-20100 summary report figures.xlsx

3. Scope of Work

The AEMP scope of work in 2024 included the following:

- Four seasons (including winter) of surface water sampling from the Mackenzie River and three seasons (spring, summer, autumn) of sampling Bosworth Creek (since trials have found Bosworth Creek freezes to bottom during winter);
- Passive sampling using semi-permeable membrane devices (SPMDs) and passive diffusion bags (PDBs) to better characterize concentrations of PAHs, alkylated PAHs (aPAHs), and petroleum hydrocarbons in surface water;
- A SFS in Bosworth Creek to characterize fish health;
- Preparing a summary report of the methods and findings.

A LFS was not executed in 2024 given that it is still in the development stage with Imperial, the SLWB and local communities.

3.1 Surface Water Sampling

The surface water sampling component of the AEMP included grab samples and passive sampling in the Mackenzie River and Bosworth Creek. Grab samples were collected in March, July, August, and September 2024 and PSDs were deployed to measure PAHs/aPAHs and petroleum hydrocarbons during the open water period (June to September).

3.1.1 Surface Water Sampling Locations

Surface water sampling locations in 2024 are summarized in Table 3-1 and presented over aerial imagery in Figure 2 (all sites), Figure 3 (near-field sites only), and Figure 4 (Bosworth Creek only). Sample sites are grouped as upstream and downstream of the NWO to fit a Control-Impact experimental design, where upstream sites are used to establish normal background chemistry to be compared with downstream conditions. Seasonal sampling over all four seasons occurs on the Mackenzie River, however, samples on Bosworth Creek are only sampled during the open water period due to the creek being frozen to the bottom in winter.

Four additional sampling locations were added in 2024; one upstream in Bosworth Creek and three downstream in the Mackenzie River (Table 3-1). Although some statistical analysis of these sites was performed in 2024, no statistical results are discussed in detail due to the small sample set of three to four samples. Analysis of these sites will be available in the 2025 summary report provided a minimum of eight samples are collected.

Winter sampling is conducted by accessing the locations over ice; samples are only collected at locations deemed safe to access by local guides. Open water and very rough ice (which leads to rough terrain crossing and inconsistent ice thickness) has been observed near some locations.

Table 3-1: 2024 Surface Water Sampling Locations

Name	Target Environment	Potential Facility-related Stressors	Samples per Year	Latitude (Northing)	Longitude (Easting)	Historical Sampling Location
AEMP-US-01 (Tulita/Midway Island)	Near shore river flow	None	4	65.03432	-126.13506	---
AEMP-US-02 (10 Mile Island)	Near shore river flow	None	4	65.20696	-126.52761	AEMP-10
AEMP-US-03 (Norman Wells Upstream)	Mainstem flow	None	4	65.25199	-126.68586	---
AEMP-US-04 (Bosworth Creek)	Mainstem flow – deep pool	None	3	65.29488	-126.88298	---
AEMP-US-05* (Bosworth Creek)	Mainstem flow – deep pool	None	3	65.30009	-126.88890	---
AEMP-DS-01 (Bosworth Creek)	Mainstem flow – deep pool	Imperial Site	3	65.28309	-126.86523	AEMP-02
AEMP-DS-02 (Marine Dock)	Near shore – flowing. Near facility	Boat activity and water release	4	65.27904	-126.87501	AEMP-08
AEMP-DS-03 (Island 3)	Mid-channel flow	Flowline; island maintenance	4	65.27665	-126.91545	AEMP-01
AEMP-DS-04 (Refinery)	Near shore flow	Imperial site, tank farm, historical contamination	4	65.27954	-126.84972	AEMP-07
AEMP-DS-05 (Radar North)	Mid-channel flow as it splits north around an island	Imperial site	4	65.30898	- 127.08214	AEMP-11
AEMP-DS-06 (FGH Blue Fish)	Deep pool near natural islands – identified by locals as high valued fishing site	Imperial site	4	66.18753	-128.97973	---
AEMP-DS-07 (FGH Ramparts)*	Mainstem flow – Fort Good Hope	Imperial site	3#	66.18554	-128.92648	---
AEMP-DS-08 (Radar South)*	Mid-channel flow as it splits south around an island	Imperial site	3#	65.29882	-127.10331	---
AEMP-DS-09 (End of facility) *	Mid channel flow	Imperial site	4	65.2869	-126.98148	---

Notes:

* indicates new location for 2024 sampling year.

# indicates not accessed in winter due to safety concerns.

3.1.2 Surface Water Analytical Suite

Surface water samples were analyzed for the parameters presented in Table 3-2. Analytes identified as Key Indicator Parameters (KIPs) for the Norman Wells field are indicated by bold text. Rationale for the KIPs chosen will be presented in the AEMP plan.

Table 3-2: Surface water Analytical Suite and Sample Method.

Category	Parameters
General	Electrical conductivity (measured and calculated)[1], Dissolved Oxygen (DO)[1], pH[1], Temperature[1], Turbidity[1], Total hardness as $CaCO_3$, Total alkalinity as $CaCO_3$
Indicators	Chloride, Sulphate, Iron, Manganese, Total dissolved solids (TDS), Total suspended solids (TSS)
Cations, Anions, and Ion Balance	Calcium, Magnesium, Potassium, Sodium, Bicarbonate, Carbonate, Hydroxide, Anion sum, Cation sum, Ion balance
Organics	Total organic carbon, Dissolved organic carbon,
Nutrients	Nitrite as N, Nitrate as N, Nitrate plus nitrite as N, Total Kjeldahl nitrogen (TKN), Ammonia as N, Sulphide, Sulphur (total and dissolved), Orthophosphate
BTEX compounds[2]	Benzene, Toluene, Ethylbenzene, Total xylenes
Select Hydrocarbons[2]	Oil and grease, PHC F1 (C6-C10), PHC F1 (C6-C10) – BTEX, PHC F2 (>C10-C16), F3 (>C16-C34) and F4 (>C34-C50)
Polycyclic Aromatic Hydrocarbons (PAHs)[2]	Acenaphthene [AN], Acenaphthylene [AC], Acridine, Anthracene [A], Benzo(a)Anthracene [BA], Benzo(a)Pyrene [BaP], Benzo(b,j)Fluoranthene [BbjFl], Benzo(c)Phenanthrene, Benzo(e)Pyrene [BeP], Benzo(g,h,i)Perylene [BG], Benzo(k)Fluoranthene [BkFl], Chrysene [C], Dibenzo(a,h)Anthracene [DA], Fluoranthene [FL], Fluorene [F], Indeno(1,2,3-c,d)Pyrene [IP], Naphthalene [N], Perylene [PR], Phenanthrene [P], Pyrene [PY], Quinoline
Alkylated PAHs (aPAHs)[2]	C1-Naphthalene [N1], C2-Naphthalene [N2], C3-Naphthalene [N3], C4-Naphthalene [N4], Biphenyl [B], C1-Biphenyl [B1], C2-Biphenyl [B2], C1-Fluorene [F1], C2-Fluorene [F2], C3-Fluorene [F3], Dibenzothiophene [D], C1-Dibenzothiophene [D1], C2-Dibenzothiophene [D2], C3-Dibenzothiophene [D3], C4-Dibenzothiophene [D4], C1-Phenanthrene/Anthracene [PA1], C2-Phenanthrene/Anthracene [PA2], C3-Phenanthrene/Anthracene [PA3], C4-Phenanthrene/Anthracene [PA4], C1-Fluoranthene/Pyrene [FlPy1], C2-Fluoranthene/Pyrene [FlPy2], C3-Fluoranthene/Pyrene [FlPy3], C4-Fluoranthene/Pyrene [FlPy4], C1-Benzo(a)anthracene/Chrysene [BaAC1], C2-Benzo(a)anthracene/Chrysene [BaAC2], C3-Benzo(a)anthracene/Chrysene [BaAC3], C4-Benzo(a)anthracene/Chrysene [BaAC4], C1-Benzo(b,j,k)Fluoranthene [BFl1], C2-Benzo(b,j,k)Fluoranthene [BFl2], C1-Acenaphthene [AC1], 1-Methlynaphthalene
Metals and Trace Elements (total/dissolved)	Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, lithium, Mercury, Molybdenum, Nickel, Phosphorus, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc

Notes:

Superscript 1 – denotes parameters that are measured in the field in addition to grab sampling

Superscript 2 - denotes parameters that are measured using passive sampling techniques in addition to grab sampling

3.2 Small-bodied Fish Health Sampling

The SFS component of the AEMP in 2024 consisted of collecting fish from within three separate reaches of Bosworth Creek. A summary of the reaches and aerial imagery are provided in Table 3-3 and Figure 5, respectively. Slimy sculpin (*Cottus cognatus*) were captured in September 2024 from each reach using backpack electrofishing equipment, and were dissected for fish health assessment and laboratory analysis of tissue (please refer to AEMP V4 for species selection). Sample location AEMP-FS-02 is the experimental site that encompasses the reach from 550 m upstream from the confluence with the Mackenzie River to the reach immediately adjacent to the CPF (approximately 850 m of Bosworth Creek; Figure 5). The AEMP-FS-01 sample location was the reference site established in 2023 that consists of approximately 450 m of Bosworth Creek upstream from the pipeline right of way (Figure 5). Sample location AEMP-FS-03 was added in 2024 (to act as a second reference for comparison with conditions at AEMP-FS-02) and is upstream from the AEMP-FS-01 sample reach on Bosworth Creek. Location AEMP-FS-03 extends from upstream of the winter road crossing (approximately 165 m) to a beaver impoundment approximately 360 m upstream from the downstream end (Photo 3-1 and Figure 5). Approximately 580 m separates the two reference reaches (AEMP-FS-01 and AEMP-FS-03), and approximately 1 km separates the lower reference reach (AEMP-FS-01) and experimental sampling reach (AEMP-FS-02). This ensures there is no slimy sculpin population overlap between locations given the documented home range of slimy sculpin (Keeler, 2006, Keeler and Cunjak, 2007). Fishing activities for the 2024 AEMP were performed under the S-24/25-3028-YK-A1 licence to fish for scientific purposes issued by Fisheries and Oceans Canada.

Table 3-3: Locations for slimy sculpin tissue sampling during the 2024 AEMP

Site Name	Type	Location	Latitude	Longitude
AEMP-FS-01	Reference	Mid-reach of Bosworth Creek – upstream of NWO	65.292460° to 65.296002°	-126.881189° to -126.885252°
AEMP-FS-02	Experimental	Lower Reach of Bosworth Creek – downstream of NWO	65.283467° to 65.285386°	-126.864967° to -126.876320°
AEMP-FS-03	Reference	Upper reach of Bosworth – upstream of NWO	65.299447° to 65.302082°	-126.888258° to -126.888668°

Photo 3-1: Beaver dam at upstream end of sampling reach AEMP-FS-03. No fishing effort conducted above dam.

3.2.1 Small-bodied Fish Analytical Suite

Small-bodied tissue samples were analyzed for the parameters presented in Table 3-4. Analytes identified as a KIP for the Norman Wells field are indicated by bold text. Fish health was assessed based on body weight relative to length, as well as liver and gonad weight relative to body weight as described in Section 5.2.1.

Table 3-4: Small-bodied fish tissue analytical suite in 2024

Category	Parameters
Polycyclic Aromatic Hydrocarbons (PAHs)	Acenaphthene [AN], Acenaphthylene [AC], Anthracene [A], Benzo(a)Anthracene [BA], Benzo(a)Pyrene [BaP], Benzo(b)Fluoranthene [BbFl], Benzo(e)Pyrene [BeP], Benzo(g,h,i)Perylene [BG], Benzo(j,k)Fluoranthene [BjkFl], Chrysene [C], Dibenzo(a,h)Anthracene [DA], Dibenzothiophene [D], Fluoranthene [FL], Fluorene [F], Indeno(1,2,3-c,d)Pyrene [IP], Naphthalene [N], Perylene [PR], Phenanthrene [P], Pyrene [PY]
Alkylated PAHs (aPAHs)	C1-Naphthalene [N1], C2-Naphthalene [N2], C3-Naphthalene [N3], C4-Naphthalene [N4], C1-Fluorene [F1], C2-Fluorene [F2], C3-Fluorene [F3], Dibenzothiophene [D], C1-Dibenzothiophene [D1], C2-Dibenzothiophene [D2], C3-Dibenzothiophene [D3], C4-Dibenzothiophene [D4], C1-Phenanthrene/Anthracene [PA1], C2-Phenanthrene/Anthracene [PA2], C3-Phenanthrene/Anthracene [PA3], C4-Phenanthrene/Anthracene [PA4], C1-Fluoranthene/Pyrene [FlPy1], C2-Fluoranthene/Pyrene [FlPy2], C3-Fluoranthene/Pyrene [FlPy3], C4-Fluoranthene/Pyrene [FlPy4], C1-Benzo(a)anthracene/Chrysene [BaAC1], C2-Benzo(a)anthracene/Chrysene [BaAC2], C3-Benzo(a)anthracene/Chrysene [BaAC3], C4-Benzo(a)anthracene/Chrysene [BaAC4], C1-Benzofluoranthenes/Benzopyrenes [BFlBPy1], C2-BenzoFluoranthenes/Benzopyrenes [BFlBPy2], C1-Acenaphthene [AN1], 1-Methlynaphthalene
Metals and Trace Elements (total and dissolved	Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, lithium, Mercury, Molybdenum, Nickel, Phosphorus, Selenium, Silicon, Silver, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc
Mixed-function Oxygenase Protein	Total protein, CYP1A1 protein

4. Sampling Methods

4.1 Water Quality Monitoring

Water quality monitoring used two approaches, grab sampling and passive sampling. Grab sampling was used to obtain a snapshot of conditions at time of collection and is used to analyze general chemical and physical water quality parameters, metals, and nutrients. Passive sampling includes the deployment of PDBs and SPMDs that are submerged in the water column for a longer period. Water from PDBs is transferred to laboratory-supplied bottles for analysis of petroleum hydrocarbons (BTEX, PHC F1-F4 and Oil and Grease). Triolein strips used in the SPMD deployment are analyzed for PAHs and aPAHs. Sampling during winter was limited to direct grab samples due to difficulties in deploying and retrieving under-ice equipment. If PSDs are lost or damaged during sample collection, a grab sample is collected as a substitute for affected parameters.

Seasonal changes in surface water quality can be closely associated with changes in flow, therefore, discharges in the Mackenzie River and Bosworth Creek measured at WSC hydrometric stations were used to contextualize water quality results. Hydrographs showing the discharge of the Mackenzie River and Bosworth Creek in 2024 are provided in Figure 4-1 and Figure 4-2, respectively.

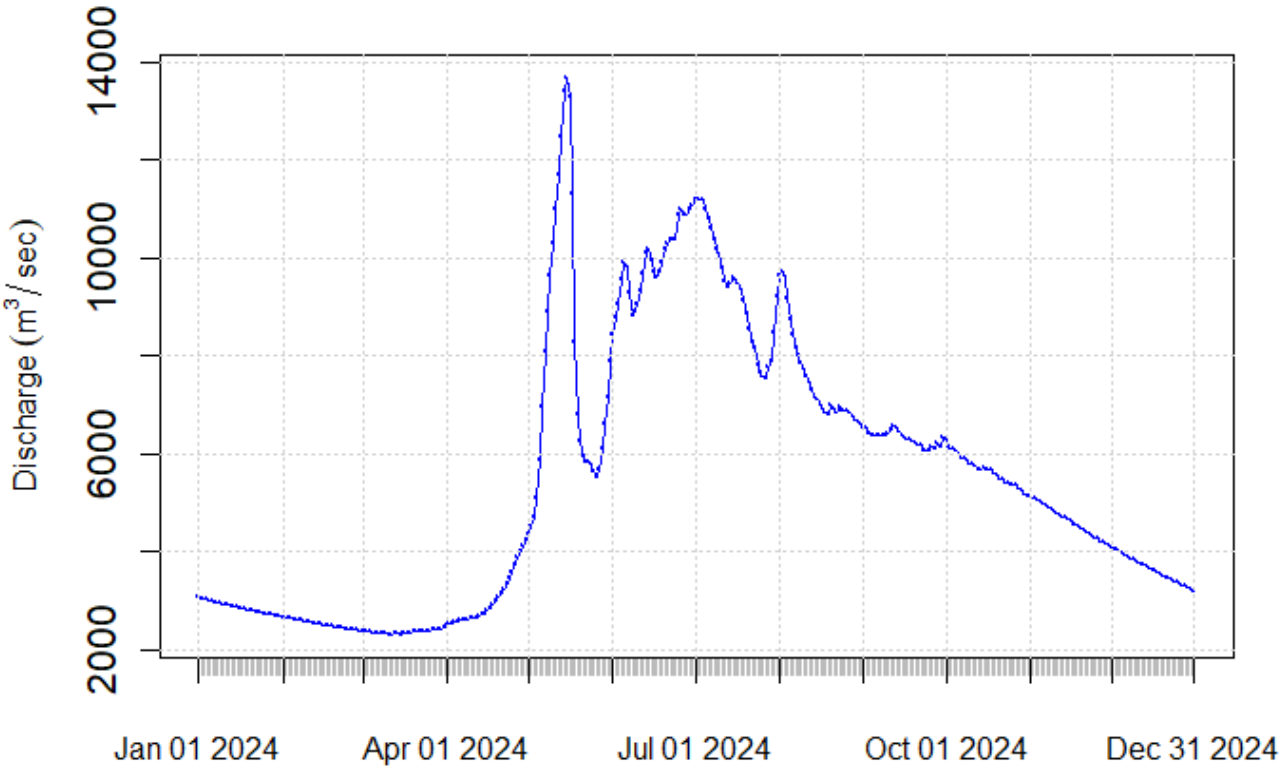

Figure 4-1: Mackenzie River 2024 Hydrograph (January 1 to December 31)

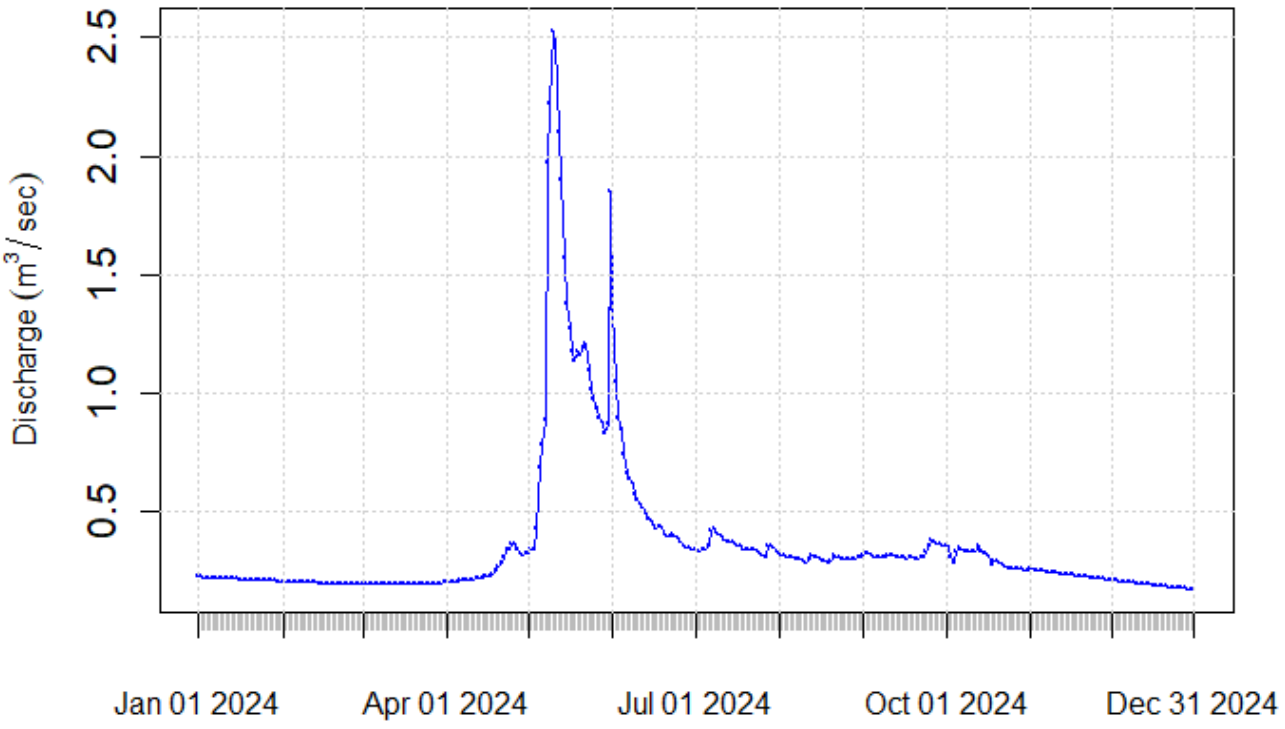

Figure 4-2: Bosworth Creek 2024 Hydrograph (January 1 to December 31)

4.1.1 Grab Sampling

Open water grab samples were collected by wading into the watercourse and/or using an extendable pole with a sample cup to extend the reach. The sampling cup was triple rinsed using water from the waterbody before sampling at each location and rinse water was discarded away from the sampling location. Samples were collected upstream of where the sampler was standing by lowering the sample cup to a depth of approximately 30 cm (or mid-column if depth was less than 30 cm). Water was poured into laboratory-supplied sample containers specific to the analysis required. In winter, boreholes through ice were drilled using a battery-powered ice auger and samples were collected by lowering an extendable pole into the open hole. Samples were stored in coolers, on ice, for shipment to Bureau Veritas Laboratory (BV Labs) and standard chain of custody protocols were followed for each submission. Grab sampling dates corresponded to the retrieval dates for PSDs.

4.1.2 Passive Time-integrated Sample Collection

Passive samplers, including PDBs and SPMDs, were set in all sampling locations during the open water season. For locations in Bosworth Creek, samples were secured using a purpose-built deployment arm with a float (Photo 4-1). The arms consisted of two steel poles bolted together such that one could pivot on the other to account for water surface elevation fluctuations while maintaining the PSDs at a consistent depth below water. One pole was placed into the sediment using a post pounder leaving the other to act as an articulating arm within the water column. A buoy was attached to the end of the arm so the PSDs would remain suspended in the water column despite water level changes. Two PDBs were filled with deionized water then secured to the arm using zip ties. Water from PDBs was transferred to laboratory supplied sample containers upon retrieval and shipped to BV Labs on ice along with grab samples. For locations in the Mackenzie River, purpose-built anchors were constructed of concrete filled buckets (Photo 4-2).

Photo 4-1: Example of PSDs deployed in Bosworth Creek in 2024 at AEMP-US-05

Photo 4-2: Cement filled bucket used for anchoring passive samplers in the mainstem Mackenzie River in 2024

Triolein film SPMDs were set in each sampling location for a target duration of 30 days following the procedures outlined in the Standard Operating Procedures for Deployment Arrays (Environment and Climate Change Canada [ECCC] 2018).

Three film strips at each location were woven around brackets (Photo 4-3) and placed into a SPMD cannister (Photo 4-4) that was then attached to the end of the articulating arm. Following deployment, films were transferred to a glass jar (Photo 4-5); the film was kept frozen and away from light before and after deployment. Each film was pre-spiked by the supplier with 10 µg of Anthracene-d10, 10 µg of Fluoranthene-d10 and 1 µg Dibenz[a,h]Anthracene-d14 as performance reference compounds (PRCs). All SPMD samples were shipped on ice to the SGS AXYS laboratory for analysis.

Photo 4-3: Example of brackets for holding triolein film in SPMDs (Right) and film woven into bracket (Left).

Photo 4-4: Deployment arm with SPMD cannister and PDBs deployed into the Mackenzie River

Photo 4-5: Sample jars with triolein strips from SPMDs after retrieval and containers for quality control samples

Actual deployment durations varied at each site due to travel and support availability. Furthermore, some samples were lost due to greater than anticipated drops in water elevation, damage from debris or vandalism. If PSDs were damaged or otherwise unusable then a grab sample was collected at that location instead. Deployment times and retrieval status of PSDs deployed in 2024 are summarized in Table 4-1.

Table 4-1: Passive Sampler Deployment Summary

Location	Spring Deployment June – July 2024	Summer Deployment July – August 2024	Autumn Deployment August – September 2024
AEMP-US-01 (Midway Island)	Duration: 20 Jun – 19 Jul (29 days) Discharge Deploy: 10,200 m^3/s Discharge Retrieve: 9,160 m^3/s Status: Good	Duration: 19 Jul – 15 Aug (27 days) Discharge Deploy: 9,160 m^3/s Discharge Retrieve: 7,110 m^3/s Status: Good	Duration: 15 Aug – 17 Sep (33 days) Discharge Deploy: 7,110 m^3/s Discharge Retrieve: 6,320 m^3/s Status: Good
AEMP-US-02 (10 Mile Island)	Duration: 20 Jun – 19 Jul (29 days) Discharge Deploy: 10,200 m^3/s Discharge Retrieve: 9,160 m^3/s Status: Good	Duration: 19 Jul – 15 Aug (27 days) Discharge Deploy: 9,160 m^3/s Discharge Retrieve: 7,110 m^3/s Status: Acceptable – one PBD empty	Duration: 15 Aug – 17 Sep (33 days) Discharge Deploy: 7,110 m^3/s Discharge Retrieve: 6,320 m^3/s Status: Good
AEMP-US-03 (NW Upstream)	Duration: 20 Jun – unknown Discharge Deploy: 10,200 m^3/s Discharge Retrieve: 9,160 m^3/s Status: Missing	Duration: 19 Jul – 16 Aug (28 days) Discharge Deploy: 10,200 m^3/s Discharge Retrieve: 6,990 m^3/s Status: Good	Duration: 15 Aug – 17 Sep (33 days) Discharge Deploy: 6,990 m^3/s Discharge Retrieve: 6,530 m^3/s Status: Good
AEMP-US-04 (Upper Bosworth 1)	Duration: 21 Jun – 18 Jul (27 days) Discharge Deploy: 0.396 m^3/s Discharge Retrieve: 0.354 m^3/s Status: Good	Duration: 18 Jul – 16 Aug (26 days) Discharge Deploy: 0.344 m^3/s Discharge Retrieve: 0.301 m^3/s Status: Good	Duration: 16 Aug – 13 Sep (28 days) Discharge Deploy: 0.301 m^3/s Discharge Retrieve: 0.313 m^3/s Status: Good

Location	Spring Deployment June – July 2024	Summer Deployment July – August 2024	Autumn Deployment August – September 2024
AEMP-US-05 (Upper Bosworth 2)	Duration: 20 Jun – 18 Jul (28 days) Discharge Deploy: 0.402 m^3/s Discharge Retrieve: 0.354 m^3/s Status: Good	Duration: 18 Jul – 16 Aug (29 days) Discharge Deploy: 0.344 m^3/s Discharge Retrieve: 0.301 m^3/s Status: Good	Duration: 16 Aug – 12 Sep (27 days) Discharge Deploy: 0.301 m^3/s Discharge Retrieve: 0.312 m^3/s Status: Good
AEMP-DS-01 (Lower Bosworth)	Duration: 19 Jun – 18 Jul (29 days) Discharge Deploy: 0.438 m^3/s Discharge Retrieve: 0.354 m^3/s Status: Good	Duration: 19 Jul – 16 Aug (28 days) Discharge Deploy: 0.341 m^3/s Discharge Retrieve: 0.301 m^3/s Status: Good	Duration: 16 Aug – Sep 13 (28 days) Discharge Deploy: 0.301 m^3/s Discharge Retrieve: 0.313 m^3/s Status: Good
AEMP-DS-02 (Mainland Dock)	Duration: 21 Jun – 20 Jul (29 days) Discharge Deploy: 10,300 m^3/s Discharge Retrieve: 8,870 m^3/s Status: Good. Duplicate collected	Duration: 21 Jul – 16 Aug (26 days) Discharge Deploy: 8,550 m^3/s Discharge Retrieve: 6,990 m^3/s Status: Good. Duplicate collected	Duration: 16 Aug – 12 Sep (27 days) Discharge Deploy: 6,990 m^3/s Discharge Retrieve: 6,570 m^3/s Status: Good
AEMP-DS-03 (Island 3)	Duration: 20 Jun – 19 Jul (29 days) Discharge Deploy: 10,200 m^3/s Discharge Retrieve: 9,160 m^3/s Status: Good	Duration: 19 Jul – 15 Aug (27 days) Discharge Deploy: 9,160 m^3/s Discharge Retrieve: 7,110 m^3/s Status: Good	Duration: 15 Aug – 17 Sep (33 days) Discharge Deploy: 7,110 m^3/s Discharge Retrieve: 6,320 m^3/s Status: Good
AEMP-DS-04 (Refinery)	Duration: 19 Jun – 20 Jul (31 days) Discharge Deploy: 9,910 m^3/s Discharge Retrieve: 8,870 m^3/s Status: Good	Duration: 20 Jul – 16 Aug (27 days) Discharge Deploy: 8,870 m^3/s Discharge Retrieve: 6,990 m^3/s Status: Damaged, vandalized. No sample	Duration: 16 Aug – 13 Sep (28 days) Discharge Deploy: 6,990 m^3/s Discharge Retrieve: 6,530 m^3/s Status: PDBs missing
AEMP-DS-05 (Radar North)	Duration: 21 Jun – 19 Jul (28 days) Discharge Deploy: 10,300 m^3/s Discharge Retrieve: 9,160 m^3/s Status: Good	Duration: 19 Jul – 15 Aug (27 days) Discharge Deploy: 9,160 m^3/s Discharge Retrieve: 7,110 m^3/s Status: SPMDs missing	Duration: 15 Aug – 17 Sep (33 days) Discharge Deploy: 7,110 m^3/s Discharge Retrieve: 6,320 m^3/s Status: Good

Location	Spring Deployment June – July 2024	Summer Deployment July – August 2024	Autumn Deployment August – September 2024
AEMP-DS-06 (FGH Blue Fish)	No sample due to wildfires	Duration: 19 Jul – 14 Aug (28 days) Discharge Deploy: 9,160 m^3/s Discharge Retrieve: 7,110 m^3/s Status: Good	Duration: 14 Aug – unknown Discharge Deploy: 7,110 m^3/s Discharge Retrieve: 6,320 m^3/s Status: Missing
AEMP-DS-07 (FGH Ramparts)	No sample due to wildfires	Duration: 17 Jul – 14 Aug (28 days) Discharge Deploy: 9,490 m^3/s Discharge Retrieve: 7,180 m^3/s Status: Good	Duration: 14 Aug – 18 Sep (35 days) Discharge Deploy: 7,180 m^3/s Discharge Retrieve: 6,290 m^3/s Status: Good
AEMP-DS-08 (Radar South)	Duration: 20 Jun – 19 Jul (29 days) Discharge Deploy: 10,200 m^3/s Discharge Retrieve: 9,160 m^3/s Status: Good	Duration: 19 Jul – 15 Aug (27 days) Discharge Deploy: 9,160 m^3/s Discharge Retrieve: 7,110 m^3/s Status: Good	Duration: 15 Aug – 17 Sep (33 days) Discharge Deploy: 7,110 m^3/s Discharge Retrieve: 6,320 m^3/s Status: Good
AEMP-DS-09 (End of facility)	Duration: 20 Jun – 19 Jul (29 days) Discharge Deploy: 10,200 m^3/s Discharge Retrieve: 9,160 m^3/s Status: Good	Duration: 19 Jul – 15 Aug (27 days) Discharge Deploy: 9,160 m^3/s Discharge Retrieve: 7,110 m^3/s Status: Good	Duration: 15 Aug – 17 Sep (33 days) Discharge Deploy: 7,110 m^3/s Discharge Retrieve: 6,320 m^3/s Status: Good

4.1.3 Water Quality Assurance and Quality Control

Water sampling field quality assurance and quality control (QA/QC) methods included the following:

- Grab samples
  - Field duplicate samples collected at a rate of 10%;
  - Field blank samples;
  - Trip blank samples.
- SPMD samples
  - Field duplicate sample, one per season;
  - Trip blank sample, one per season; and
  - Film degradation (Day Zero) sample, one per sample period.

Water sample laboratory QA/QC consists of equipment blanks, methods blanks, laboratory duplicates, matrix spikes and laboratory control samples. The Day Zero blank SPMDs were sent directly from the supplier to the laboratory to quantify potential degradation of the PRCs. Results of the QA/QC analyses for the 2024 AEMP are presented in data tables summarizing analytical data, laboratory certificates of analysis, and deficiencies and potential impact on data quality and interpretation are discussed in Appendix B.

Overall, the QA/QC analysis indicated that the data presented is fit-for-purpose. No QA/QC issues were identified that would alter the overall conclusions presented herein.

4.2 Small-bodied Fish Health Monitoring

The 2024 AEMP fish health assessment focused on sampling fish from Bosworth Creek. In 2024, an additional sample location was added to Bosworth Creek 580 m upstream from the existing reference to act as a second reference location (AEMP-FS-03).

4.2.1 Bosworth Creek Slimy Sculpin Sampling

Slimy sculpin were captured from each sample reach (Figure 5) using a Smith-Root LR-24 backpack electrofisher targeting shallow riffle and run habitat in Bosworth Creek . One person controlled the backpack electrofisher, while one to three people netted the immobilized fish. Sculpin prefer to rest under rocks and other debris, and their spiny gill plates and fins tend to flare during electrofishing. For this reason, rocks and other debris was moved or disturbed to dislodge any fish that may have become stuck under the substrate. All captured fishes were immediately identified and non-target fish were released downstream from fishing activities. Slimy sculpin with a total length of at least 50 mm (sexually mature, non-juvenile fish) were retained and held in an aerated 20-L bucket filled with water collected from the creek as well as some debris to help fish remain calm as shown in Photo 4-6. Captured fish were transported to a temporary dissection laboratory in the NWO workshop (Photo 4-7).

Photo 4-6: Captured slimy sculpin in aerated bucket. Debris in bucket helps fish to remain calm during transport.

At the dissection laboratory, each sculpin was removed from the holding bucket individually and anesthetized in 200 mg/L tricaine methanesulfonate (MS-222) until the fish became unresponsive (Photo 4-8). The spinal cord was severed behind the head to ensure the fish was deceased before dissection. Total length (to nearest millimeter [mm]) and body weight (to nearest milligram [mg]) were measured, and the fish was inspected for any external abnormalities and parasites. During dissection, the liver and gonads (if developed) were removed and measured to the nearest mg and inspected for deformities. The gonads were assessed to determine the sex and maturity of each individual, with underdevelopment or lack of gonads indicating immaturity. All weights were measured using an Ohaus SPX223 Scout analytical balance. Total length, body weight, liver weight, gonad weight, maturity, sex, and gross pathology were recorded onto an Excel workbook. Flash-freezing materials such as dry ice and liquid nitrogen could not be sourced at the sampling location given the remoteness of the NWO. Therefore, livers were immediately placed in pre-frozen cryovials resting in frozen cooling blocks within a freezer (nominal temperature of -20°C) for rapid freezing to prevent protein degradation. Using this technique, liver samples froze in less than one minute after being removed from each fish.

Samples for metal testing were packaged individually in Whirl-Pak bags, and composite PAH samples were packaged together in hexane and acetone washed aluminum foil and placed in a freezer immediately following dissection. All dissection tools and dissection workstations were sterilized after each dissection using 80% ethanol.

Photo 4-7: Dissection area set up in equipment warehouse near Bosworth Creek

Samples for metal analysis were shipped to Trich Analytics Laboratory (Trich) in Saanichton, British Columbia, while PAH samples were submitted to SGS AXYS in Sidney, British Columbia for analysis. Liver samples were submitted to the InnoTech Alberta (InnoTech) laboratory in Vegreville, Alberta to measure CYP1A1 protein and total protein concentrations.

Photo 4-8: Two slimy sculpin immobilized in tricaine methanesulfonate (MS-222). Suspected that banded fish (left) is male and paler fish lacking bands (right) is female.

Mixed-Function oxygenase (MFO) enzymes are localized in the liver and play a key role in the detoxification of many contaminants such as PAHs in fish (Hodson et al. 1991). The CYP1A1 enzyme is a MFO protein that is considered the most important MFO enzyme responsible for detoxification of xenobiotics (Hodson et al. 1991; Brooks et al. 2015). The CYP1A1 protein content was measured using a commercially available enzyme-linked immunosorbent assay (ELISA) kit targeting CYP1A1. TRSA worked with InnoTech to develop a protocol for liver tissue preparation and CYP1A1 concentrations were normalized to total protein in tissue lysates. Total protein was measured using a commercially available Pierce Bicinchoninic acid protein assay kit. The liver protein measurement protocol developed is outlined alongside validation steps included in the laboratory report provided by InnoTech (Appendix C).

4.2.1.1 Quality Control and Quality Assurance

An effective QA/QC program is vital to ensure accurate data collection/interpretation and to quantify any uncertainty introduced during the field execution or laboratory analysis. The tissue sampling QA/QC program during the 2024 AEMP included analysis of the following:

- Certified reference materials (CRMs) such as DORM-5, NIST-1566b, and NIST-2976;
- Field sample duplicates; and

- Triplicate analysis of protein content analyses.

The QA/QC results of the fish tissue component of the 2024 AEMP are reviewed in detail in Appendix D, and any potential uncertainties are described alongside results presented in Section 6.2. Overall, the QA/QC program demonstrated that the 2024 results are considered fit for purpose.

4.3 Deviation and Potential Method Improvements

4.3.1 Surface Water Sampling Program

There were few limitations in the 2024 surface water sampling program. These included:

- There were no PSDs deployed at location AEMP-DS-06 and AEMP-DS-07 in June 2024 near Fort Good Hope due to wildfires;
- PSDs were missing from location AEMP-US-03 upon retrieval attempt in July 2024;
- PSDs were missing from location AEMP-DS-04 upon retrieval in August 2024 and the PDBs were missing upon retrieval in September 2024;
- SPMDs were missing from location AEMP-DS-05 upon retrieval in August 2024; and
- PDBs were missing from location AEMP-DS-06 upon retrieval in September 2024.

The overall success rate of deployment and successful retrieval in 2024 was higher (89% recovery) than in 2023 (55% recovery) following changes to deployment methods in the Mackenzie River. Challenges with damage and missing devices are believed to be caused by floating debris, vandalism and/or tampering by wildlife; teeth marks were observed in some buoys.

4.3.2 Fish Tissue Analysis

The CYP1A1 protein concentrations measured in slimy sculpin livers were near the detection limit of the ELISA kit. Analytical precision decreases as concentrations approach the detection limit therefore adjustments to sample preparation could increase the ability to reliably measure the very low concentrations. In 2024, InnoTech isolated the S9 fraction (post-mitochondrial supernatant) and microsomal component of the liver cells to further improve detection and resolution in measurement of protein concentrations. Tissue samples used for these trials were from slimy sculpin liver samples collected in 2024. Although no results below the detection range of the ELISA kit were observed, these adjustments in process did not alter the observed CYP1A1 concentrations.

5. Data Evaluation and Interpretation Methods

5.1 Water Quality Assessment Methods

Water quality data are presented as follows:

- Data tables with published guideline and control limit comparison;
  - All data parameters and historical data presented.
- Trend charts with control limits;
  - All KIPs presented for locations with an appropriate dataset established. Dataset development is provided in Appendix E.
  - Data is presented per season to account for natural variation that may affect results.
- Piper plots of major ions;
  - Piper plots provide a visual representation of water ion chemistry which can indicate differences in the overall chemical characterization of a sample.
- Mann-Kendall trend analysis;
  - Mann-Kendall analysis is used to determine if there are statistically significant trends in data.
  - All KIPs presented for locations with an appropriate dataset established (Appendix E).

5.1.1 Published Environmental Guideline Comparison

Water quality variables are compared to the following guideline sets with guideline exceedances highlighted:

- Canadian Council of Ministers of the Environment guidelines for the protection of freshwater aquatic life (CCME FWAL; CCME 2012, as amended);
- Federal Environmental Quality Guidelines (FEQG; ECCC 2024); and
- Health Canada Guidelines for Canadian Drinking Water Quality (CDWQG; Maximum Acceptable Concentrations only; Health Canada 2025).

Water quality criteria for some variables vary depending on environmental conditions in the receiving water body and this allows these criteria to consider the resilience of the receiving environment in the guideline derivation. Where environmental quality guidelines are equation-derived based on site-specific factors (such as pH or hardness) that modify the toxicity of a parameter, the upstream data water quality set is used to represent the natural conditions of the receiving environment. As upstream water chemistry will be presented as ranges, the more conservative (e.g. 25th percentile or similar) is used. Site factors used during the AEMP to determine values for equation-derived guidelines in 2024 are provided in Table 5-1.

Table 5-1: Values for Site-Specific Factors Influencing Water Quality Criteria

Parameter	Mackenzie River	Bosworth Creek
pH	8.02	8.29
Hardness	110 mg/L	330 mg/L
DOC	2.675 mg/L	2.2 mg/L
Notes: Values presented represent 25th percentile of measurements collected from upstream sites during the AEMP from 2017 to 2024		

Some guidelines are established for the total metal fraction (e.g. FEQG for total iron) while others are established for the dissolved fraction (e.g. FEQG for dissolved lead). Water quality guidelines are applied to both metal fractions as part of the AEMP given that these criteria are used as a screening tool and used in the overall interpretation of the potential meaning of results. Where a guideline for the dissolved fraction is compared with a total concentration, this provides a conservative comparison with the established guideline. Meanwhile, where the dissolved fraction is compared with a guideline based on the total fraction, the result compares the concentration that is more bioavailable to aquatic biota to the established guideline. Notably, several parameters are known to naturally exist within the Mackenzie River near or above published guidelines.

The CDWQG are intended to represent acceptable end-user water quality metrics and are not necessarily appropriate to represent a pre-treatment water source. However, in recognition of limited water treatment technologies employed in some communities, they have been presented for comparison purposes.

As such, water quality guideline comparison will be considered in conjunction with assessments of changes between upstream and downstream location (using control charting) but are generally not a reliable indicator of potential site influence.

5.1.2 Control Charting – Upstream vs Downstream Comparison

As data is collected at upstream locations (including data collected during previous versions of the AEMP from 2017 to 2022), a dataset of upstream water quality for each water body is being developed. The upstream water quality dataset is used for direct comparison of an individual event's data and to investigate any exceedances of applied guidelines to determine if they are naturally occurring. Due to the potential for changing conditions associated with climate change (for example, increased sediment loading, increased groundwater infiltration related to degrading permafrost or unusual variations in river discharge), the upstream data is presented as a range (upper and lower control limits; UCL and LCL) rather than discrete "background" numbers.

Surface water chemistry varies seasonally with discharge. For example, total metal fractions often increase during higher discharge as increased suspended sediment loads mobilize these potential contaminants, while dissolved fractions have an inverse relationship with discharge because they become more diluted during high flow (Arciszewski et al. 2018). To address this, flow-corrected control charting can be used where relationships between contaminant concentration and discharge (i.e. linear regressions or locally estimated scatterplot smoothing) exist.

These models can be assessed and UCLs/LCLs can then be defined using the residuals from these relationships (COSIA 2018). The relationship between KIPs and discharge in the Mackenzie River were investigated during the 2024 AEMP, however, flow-corrected control charting was not employed due to a lack of a defined relationship between KIP concentrations in the upstream dataset and discharge. In the absence of this statistical relationship between water chemistry and discharge, control charting using reported concentrations provides a suitable comparison between upstream and downstream conditions.

Upstream dataset development is presented in Appendix E.

The UCL and LCL are presented on the trend charts in Appendix F and in the data tables.

5.1.3 Piper Plots of Major Ions

Piper plots provide a visual tool to describe ionic composition of water to compare between water types and identify mixing between different sources.

Major ions measured during 2024 were plotted on piper plots to determine water types upstream and downstream from NWO on the Mackenzie River and Bosworth Creek. Results have been plotted individually for each season and for the full year results together to assess for seasonal variation. Results below detection were replaced with half the detection limit and water types were determined for each site. Piper plots are presented in Appendix G and results are discussed in Section 5.1.3.

5.1.4 Statistical Trend Analysis

Trend analysis was performed using the non-parametric Mann-Kendall test for temporal trends (Mann 1945; Kendall 1975) with modified Sen's non-parametric slope estimator (Sen 1968). Trend analysis included all available data for locations with a historical dataset (i.e. 2017 to 2024) and that meets that dataset criterion for detection limits.

The Mann-Kendall statistical process involves first placing the data in chronological order. The sign of the differences between all forward combinations of data pairs are then used to compute the Mann-Kendall statistic (S). Next, the Mann-Kendall S and the number of data points (n) are used for the normal approximation test. The results yield a probability value from 0 to 1. The Sen's slope is used to provide an approximate magnitude on trends. Sen's slope is calculated by evaluating the slope between all forward combinations of data pairs. The slopes are then ranked, and the median slope value is selected. Slopes are presented both in absolute terms (mg/L per year) and normalized relative to the median concentration (% change per year).

Results of a Mann-Kendall test with modified Sen's Slope were considered significant, for any of the trend analysis components of this program, when:

- the two-tailed probability value (the probability of the data set having zero trend; p-value) was less than 0.05; and

- the absolute value for the normalized slope of concentration change was greater than 10%/year.

5.1.5 Use of Data from Previous Sampling Years

Where applicable, data from 2017 to 2024 was incorporated. Historical sample locations that correspond to current sample locations are presented in Table 3-1. Historical data is included in data tables and incorporated into the upstream dataset, where applicable (Appendix E).

5.1.6 Semi-permeable Membrane Device PAHs and aPAHs Analyses

The PAH and aPAH concentrations have been calculated from the quantification results provided through SPMD analysis. Laboratory results for PAHs and aPAHs are provided as a total mass per strip, calculations developed by the United States Geological Survey (USGS 2010, 2016) were used to estimate concentration in water for measured PAHs and aPAHs, where developed chemical-specific properties are available to allow for estimation. SPMD Calculator Version 5.2 (USGS 2016) was used to determine concentrations using PRCs and where certain physical properties of parameters are known or have been estimated. SPMD Calculator Version 4.1 (USGS 2010) was used for parameters not available for calculation in Version 5.2. Calculator Version 4.1 requires a water temperature selection of either 10°C, 18°C or 26°C.

While 10°C or 18°C more closely resemble conditions in the Mackenzie River and Bosworth Creek during the sampling season, selection of these temperature eliminates estimation of several compounds as uptake sampling rates have not been determined; as such, the temperature within the calculation was set to 26°C. This provides an estimate of water concentration as opposed to reporting as not available.

The PAH concentrations calculated from SPMDs were used to determine total PAH concentrations for each sample. In addition, the profile of PAHs and aPAHs are presented in bar charts to visually compare their abundances among sites. The relative contribution of petrogenic and pyrogenic PAHs are summarized by calculating a Pyrogenic Index (PI) for each sample using Equation (1) as described in Lévesque et al. (2023) (PAH abbreviation definitions listed in Table 3-2).

Equation 1

$$Pyrogenic\ Index\ (PI) = \frac{\Sigma(AN,\ AC,\ BA,\ BaP,\ BbjFl,\ BeP,\ BG,\ BkFl,\ DA,\ FL,\ IP,\ PR)}{\Sigma(N0{-}4,\ PA0{-}4,\ F0{-}3,\ D0{-}3,\ BaAC0{-}3)}$$

5.2 Fish Health Assessment Methods

Fish Health data are presented as follows:

- Energy allocation and availability comparisons between reference and experimental sites using fish length, body weight, liver weight, gonad weight and gross pathology;
  - Fish characteristics in 2024 are compared among sites for both sexes using environmental effects monitoring (EEM) approaches.
  - Health metrics are visually compared among sites.

- Percent differences among sites calculated and compared with critical effect sizes (CES) to determine if site differences represent a potential effect on the fish population.

- Tissue residue site comparisons for both sexes;
  - Summary statistics are provided for metal concentrations measured in 2024 in slimy sculpin tissue.
  - Mean tissue residue concentrations of KIPs are compared among experimental and reference sites to identify differences among sites.
  - Calculation and presentation of UCL and LCL values for KIPs based on the CES of the mean concentration at reference sites plus/minus two times the standard deviation.
- Data tables for comparison with published tissue residue quality criteria;
  - Tissue residue concentrations measured at each site are compared with toxicological thresholds to determine potential for adverse effects and quality guidelines for KIPs, where available.

5.2.1 Energy Allocation and Availability

The fish health data analysis is modelled off the guidance developed for EEM in Canada (Environment Canada 2012) and are based primarily on the overall fish condition and allocation of resources to contaminant detoxification in the liver and reproduction. Fish identified as immature due to limited gonad development (generally less than 55 mm in length) or those with reduced gonad development because of parasitism were removed from the health assessment. Fish morphometrics and tissue residue concentrations were compared between the upstream reference sites (AEMP-FS-01 and AEMP-FS-03) and the downstream experimental site adjacent to the NWO operating area (AEMP-FS-02). This included anecdotal comparisons of gross pathology and field observations, as well as quantitative statistical comparisons using a one-way analysis of variance (ANOVA). The assumptions of a normal distribution of residuals and similar variance between treatments/sites (homoscedasticity) was visually assessed using quantile-quantile plots and residuals versus fitted plots, respectively. Sharpiro-Wilk and Bartlett statistical tests were also used to quantitatively test the assumptions of normality and homoscedasticity were met, respectively. For analyses where ANOVA assumptions were not met, data transformations were applied to meet test assumptions, or a Fisher permutation test was used to compare between sites.

Summary statistics for fish health metrics including hepatosomatic index (HSI) and gonadosomatic index (GSI) were calculated and compared among sites. Statistically significant differences among sites are noted and the relevance to potential effects is discussed. In addition, the percent difference among sites was calculated for each metric for comparison with CES established to determine if site differences represent a potential effect on the fish population (Table 5-2).

Table 5-2: Critical Effect Sizes (CES) for fish tissue endpoints measured during the 2024 AEMP

Health Metric	Critical Effect Size
Condition	10%
Hepatosomatic Index (HSI)	25%
Gonadosomatic Index (GSI)	25%
Tissue Residues	2*Standard Deviation of reference
MFO Induction (i.e. CYP1A1 content)	2*Standard Deviation of reference

Comparing liver and gonad size indices (i.e. GSI and HSI) are often influenced by poor statistical properties (e.g. assumptions about data distributions are often violated) that limit confidence in parametric statistical tools (Environment Canada 2012). For example, permutation tests were used to compare the average body length, body weight, and fish condition among sites, because data distributions did not meet statistical assumptions and data transformation was ineffective. Consequently, fish metrics that are dependent on each other were analyzed using an analysis of covariance (ANCOVA) approach. The ANCOVA analysis is a stepwise procedure that determines if sites are comparable over space and/or time. This is assessed via the comparison of linear regression slopes. Slopes which are not parallel provide the basis for evaluating statistically significant changes between sites. In relation to fish health, the analysis is used to assess body weight as it relates to fish length, and assess the relationship between liver and gonad weight with body weight. Differences among sites for each sex were assessed by comparing the linear model (ordinary least squares regression) for each site using the ANCOVA. Linear models were first analyzed with an interaction term included to investigate whether the relationship between covariates was altered by a site effect (i.e. are the slopes significantly different among sites). These models take the form provided in Equation (2), where:

- the first term (β_0) describes the model intercept;
- the second term (β_1) describes the strength/slope of the regression between covariates;
- the third term (β_2) describes the distance between the regression models for each site; and
- the last term (β_3) describes the interaction between the covariate regressions and the site.

Equation 2

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 (x_1 * x_2)$$

It is notable that a significant interaction between the covariates and the site are typically either a change in the direction or the magnitude of the relationship between the covariates among sites. If there was no interaction between the covariate relationship and the site, then it was assumed that sites are comparable. In these cases, the percent difference between the reference and downstream site was calculated according to Equation (3).

Equation 3

$$\%\, difference = \left(10^{\beta_2} - 1\right) * 100$$

If a significant interaction was observed, the methods outlined in the EEM technical guidance (Environment Canada 2012) was followed. Alternatively, percent differences based on independent means (observed or adjusted) are calculated by dividing the difference between the experimental site and reference site (experimental - reference) by the reference mean as described for EEM programs (Environment Canada 2012). All statistical analyses were performed in the R programming language (Rstudio Version 2024.04.1).

Power analyses were performed for statistical site comparisons using G Power (Version 3.1.3) software, where effect size was determined based on the partial Eta for the site effect (Faul et al. 2007). Notably, this approach is an update to the method for calculating effect size for ANOVA and ANCOVA analyses in 2023, which were determined based on the within group and between group variances. In 2024, power was calculated using both approaches and the power based on partial Eta effect sizes provides more conservative power estimates, therefore only those power estimates have been reported.

5.2.2 Tissue Residue Summary Statistics

Summary statistics for metal tissue residue concentrations were calculated and concentrations for KIPs were compared among sites using an ANOVA if data structure met assumptions or a permutation test if the assumptions were not met using data transformations. Site comparisons for metal concentrations were completed independently for females and males. In addition, upper and lower control limits were calculated for each KIP based on the tissue concentrations measured in female and male slimy sculpin at the upstream reference sites. Tissue concentrations measured at the experimental site (AEMP-FS-02) were subsequently compared with these limits to identify observations outside the CES of two standard deviations (Table 5-2). Site comparisons and comparisons with CES limits for CYP1A1 content (normalized according to total protein content) in slimy sculpin livers followed the same methods as those described for metal tissue residue concentrations.

5.2.3 Guidelines and Effects Thresholds

The CCME do not have tissue residue guidelines established for any of the indicator metal compounds. However, a FEQG has been developed for selenium, and Health Canada has established a maximum level for mercury in fish (Health Canada, 2020; Table 5-3).

Given the limited tissue residue guidelines, the concentrations of indicator metals found in slimy sculpin in Bosworth Creek were compared with toxicological thresholds established in the Society of Environmental Toxicology and Chemistry (SETAC) Linkage of effects to Tissue Residues Database (SETAC 1999). These thresholds are based on toxicologically determined benchmarks to determine the potential for adverse effects in fish. Toxicity data available in the SETAC (1999) database includes the lowest observable effect concentration (LOEC) and the no observable effect concentration (NOEC). The LOEC means the lowest treatment (i.e. tissue concentration) of a test substance that has a statistically significant adverse effect on a specific population of test organisms compared with that observed in controls.

The NOEC corresponds to the highest treatment (i.e. tissue concentration) of a test substance that shows no statistically significant adverse effect on a specific population of test organisms compared to that observed in controls. The thresholds used for comparison with tissue residue concentrations found in slimy sculpin are based on NOEC endpoints for salmonid fish species from the SETAC (1999) database (Table 5-3).

Table 5-3: Guidelines and SETAC effects thresholds for indicator metals for the NW AEMP SFS

Indicator Metal	SETAC (1999) Threshold	Health Canada Maximum Level	Federal Environmental Quality Guidelines
Aluminum	1.2 mg/kg	---	---
Arsenic	2.6 mg/kg	---	---
Barium	---	---	---
Cadmium	0.02 mg/kg	---	---
Chromium	0.58 mg/kg	---	---
Copper	3.4 mg/kg	---	---
Mercury	0.7 mg/kg	0.50 mg/kg	---
Molybdenum	---	---	---
Nickel	0.82 mg/kg	---	---
Selenium	0.25 mg/kg	---	6.7 mg/kg dw
Uranium	---	---	---
Zinc	4.5 mg/kg	---	---

Note: SETAC (1999) thresholds and Health Canada maximum level are based on wet weight (ww) tissue residue concentrations

5.2.4 Polycyclic Aromatic Hydrocarbons

The concentrations of PAHs and aPAHs measured in tissue residues are based on composite samples of multiple fish to meet tissue quantity requirements for laboratory analysis. Therefore, only one sample was analyzed for each site and no statistical comparisons between sites are possible. Total PAH was calculated for each site by summing the concentrations for all PAHs and aPAHs measured. Concentrations measured below the sample-specific detection limit were replaced with half the detection limit value for each respective PAH/aPAH to determine total PAH concentration as well as to assess potential cancer risk.

Potential cancer risk at each site was calculated using the carcinogenic potency of individual PAHs relative to Benzo(a)pyrene as described in ATSDR (2022). Overall cancer risk is summarized for each site as a potency equivalency quotient (PEQ) using the potency equivalency factors (PEF) for PAHs (Table 5-4). It is important to note that the PEQ accounts for potential effects from PAHs shown to be carcinogenic based on previous toxicological studies and does not account for potential toxicity of non-carcinogenic PAHs (ATSDR 2022). The abundances of PAHs/aPAHs are presented in bar charts. It is notable that differences in the rates of biotransformation and metabolism among PAHs/aPAHs influences the profile of PAHs/aPAHs present in tissue.

Therefore, the PI was not calculated for tissue residue results and the discussion of PAH profiles between sites is limited.

Table 5-4: Potency Equivalency Factors (PEF) of PAHs Measured in Slimy Sculpin from Bosworth Creek

Polycyclic Aromatic Hydrocarbon	Potency Equivalency Factor
Benzo[a]anthracene	0.10
Benzo[b]fluoranthene	0.10
Benzo[j,k]fluoranthenes	0.10
Benzo[a]pyrene	1.00
Chrysene	0.01
Dibenz[a,h]anthracene	2.40
Indeno[1,2,3-cd]pyrene	0.10
5/6-Methylchrysene	1.00

Note: Potency Equivalency Factors (PEFs) adopted from ASTDR (2022)

6. Results and Discussion

6.1 Surface Water Quality

Surface water quality results and interpretation are presented below. Each evaluation method represents a line of evidence of water quality; however, all are considered together in discussing overall water quality. Surface water quality results are presented in Tables 1 through 7 and in the laboratory provided certificate of analyses in Appendix H.

6.1.1 Comparison with Environmental Quality Criteria

The KIPs with concentrations above one or more of the applied environmental criteria at one or more locations in one or more sampling events in 2024 are provided in Table 6-1. Apart from copper, no metal KIPs had dissolved fraction concentrations exceeding water quality criteria in 2024. Total metal exceedances observed in 2024 are consistent with historical results, occur at sampling locations upstream and downstream from the NWO, and occur from spring to fall (June to October) when flow and suspended sediment concentrations are elevated (Table 6-1). Therefore, comparisons with environmental quality criteria do not suggest that aquatic effects are occurring from the NWO. Notably, turbidity in the Mackenzie River and Bosworth Creek regularly exceeds the CDWQG upstream and downstream from the NWO because of the naturally elevated suspended sediment concentrations compared to the highly stringent drinking water criteria.

Table 6-1: KIP Guideline Exceedances at monitoring locations in 2024

KIP	Sample Location(s)	Guideline Set Exceedances	Historical Context
Aluminum (total)	AEMP-US-01 (Midway) AEMP-US-02 (10 Mile) AEMP-US-03 (NW Upstream) AEMP-US-04 (Upper Bosworth Creek) AEMP-DS-02 (Marine Dock) AEMP-DS-03 (Island 3) AEMP-DS-04 (Refinery) AEMP-DS-05 (Radar North) AEMP-DS-06 (FGH Blue Fish) AEMP-DS-07 (FGH Ramparts) AEMP-DS-08 (Radar South) AEMP-DS-09 (End of Facility)	CCME FAL CDWQG FEQG	Aluminum concentrations have consistently exceeded the FAL guideline at both upstream and downstream locations of the Mackenzie River.
Arsenic (total)	AEMP-US-03 (NW Upstream)	CCME FAL	Single arsenic exceedance an upstream location.

KIP	Sample Location(s)	Guideline Set Exceedances	Historical Context
Cadmium (total)	AEMP-US-01 (Midway)AEMP-US-03 (NW Upstream) AEMP-DS-02 (Marine Dock) AEMP-DS-03 (Island 3) AEMP-DS-04 (Refinery) AEMP-DS-05 (Radar North) AEMP-DS-08 (Radar South)	CCME FAL	Cadmium concentrations in the Mackenzie River have exceeded the FAL guideline in both upstream and downstream locations in the spring and summer (June to August) when flow and suspended sediments are elevated.
Chromium (total)	AEMP-US-03 (NW Upstream) AEMP-DS-02 (Marine Dock) AEMP-DS-03 (Island 3) AEMP-DS-05 (Radar North) AEMP-DS-08 (Radar South)	CCME FAL FEQG	Total chromium concentrations have frequently exceeded the FEQG and occasionally the FAL guideline in both upstream and downstream locations of the Mackenzie River, particularly from spring to fall (June to September).
Copper (total)	AEMP-US-01 (Midway) AEMP-US-03 (NW Upstream) AEMP-DS-02 (Marine Dock) AEMP-DS-03 (Island 3) AEMP-DS-04 (Refinery) AEMP-DS-05 (Radar North) AEMP-DS-06 (FGH Blue Fish) AEMP-DS-07 (FGH Ramparts) AEMP-DS-08 (Radar South) AEMP-DS-09 (End of Facility)	CCME FAL	Total copper concentrations have frequently exceeded the FAL guideline in both upstream and downstream locations of the Mackenzie River, particularly from spring to fall (June to September).
Copper (dissolved)	AEMP-US-02 (10 Mile) AEMP-DS-05 (Radar North) AEMP-DS-07 (Radar South)	CCME FAL	Dissolved copper concentrations have occasionally exceeded the FAL guideline at both upstream and downstream locations on the Mackenzie River
Iron (total)	AEMP-US-01 (Midway) AEMP-US-03 (NW Upstream) AEMP-US-04 (Upper Bosworth Creek) AEMP-DS-02 (Marine Dock) AEMP-DS-03 (Island 3) AEMP-DS-04 (Refinery) AEMP-DS-05 (Radar North) AEMP-DS-06 (FGH Blue Fish) AEMP-DS-07 (FGH Ramparts) AEMP-DS-08 (Radar South) AEMP-DS-09 (End of Facility)	CCME FAL FEQG	Total iron concentrations have consistently exceeded the FAL guideline in both upstream and downstream locations of the Mackenzie River since 2017.

KIP	Sample Location(s)	Guideline Set Exceedances	Historical Context
Zinc (total)	AEMP-US-01 (Midway) AEMP-US-03 (NW Upstream) AEMP-DS-02 (Marine Dock) AEMP-DS-03 (Island 3) AEMP-DS-04 (Refinery) AEMP-DS-05 (Radar North) AEMP-DS-06 (FGH Blue Fish) AEMP-DS-07 (FGH Ramparts) AEMP-DS-08 (Radar South) AEMP-DS-09 (End of Facility)	CCME FAL	Total zinc concentrations have frequently exceeded the FAL guideline in both upstream and downstream locations of the Mackenzie River, particularly from spring to fall (June to September).

Toluene exceeded the CCME FAL guideline at the new Norman Wells site on the Mackenzie River (AEMP-US-03) upstream from the NWO in the winter sampling of 2024. This was the only sample with BTEX concentrations over the detection limit since 2017 and these detections are not considered site related given that the site is upstream from the operating area. The source of toluene at the AEMP-US-03 upstream location has not been determined but subsequent verification of this seasonal detection is necessary.

All anion and cation KIPs were below guidelines where water quality criteria are established.

6.1.2 Control Charts – Upstream vs Downstream

Parameter concentrations found to be outside of the calculated upstream UCL and LCLs are presented in Table 6-2. Control charting for SPMD measured PAHs and aPAHs will be incorporated into future reports once an appropriate upstream dataset is established.

Table 6-2: Parameters outside of Upstream Control Limits

KIP	Sample Location(s)	Above (>); Below (<)	Sample Month
Chloride	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Mar
	AEMP-DS-06 (FGH Blue Fish)	>	Mar
	AEMP-DS-01 (Lower Bosworth Creek)	>	Jul, Aug, Sep
Calcium	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Mar
	AEMP-DS-06 (FGH Blue Fish)	>	Mar, Jul, Aug, Sep
	AEMP-DS-09 (End of Facility)	>	Mar, Aug, Sep
	AEMP-DS-01 (Lower Bosworth Creek)	>	Aug
Magnesium	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Mar, Sep

KIP	Sample Location(s)	Above (>); Below (<)	Sample Month
	AEMP-DS-06 (FGH Blue Fish)	>	Mar, Jul, Aug, Sep
	AEMP-DS-09 (End of Facility)	>	Mar, Aug, Sep
	AEMP-DS-01 (Lower Bosworth Creek)	>	Aug
Sulphate	AEMP-DS-02 (Marine Dock)	>	Jul, Aug
	AEMP-DS-03 (Island 3)	>	Jul, Sep
	AEMP-DS-06 (FGH Blue Fish)	>	Mar, Jul, Aug, Sep
	AEMP-DS-07 (FGH Ramparts)	>	Sep
	AEMP-DS-09 (End of Facility)	>	Jul, Sept
	AEMP-DS-01 (Lower Bosworth Creek)	>	Aug, Sep
Total Dissolved Solids (TDS)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Mar
	AEMP-DS-06 (FGH Blue Fish)	>	Mar, Aug, Sep
	AEMP-DS-09 (End of Facility)	>	Mar
	AEMP-DS-01 (Lower Bosworth Creek)	>	Aug
Aluminum (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-05 (Radar North)	>	Jul
Arsenic (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-04 (Refinery)	>	Aug
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-08 (Radar South)	>	Jul
Barium (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-04 (Refinery)	>	Aug
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-06 (FGH Blue Fish)	>	Mar
	AEMP-DS-07 (FGH Ramparts)	>	Jul, Aug
	AEMP-DS-08 (Radar South)	>	Jul
Barium (dissolved)	AEMP-DS-01 (Lower Bosworth Creek)	>	Jul
Cadmium (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-04 (Refinery)	>	Aug
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-08 (Radar South)	>	Jul
Chromium (total)	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-08 (Radar South)	>	Jul
Copper (total)	AEMP-DS-02 (Marine Dock)	>	Jul

KIP	Sample Location(s)	Above (>); Below (<)	Sample Month
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-08 (Radar South)	>	Jul
Copper (dissolved)	AEMP-DS-01 (Lower Bosworth Creek)	>	Jul
Iron (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-04 (Refinery)	>	Aug
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-08 (Radar South)	>	Jul
Molybdenum (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-09 (End of Facility)	>	Mar
	AEMP-DS-01 (Lower Bosworth Creek)	>	Sept
Nickel (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-04 (Refinery)	>	Aug
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-08 (Radar South)	>	Jul
	AEMP-DS-01 (Lower Bosworth Creek)	>	Jul
Selenium (total)	AEMP-DS-06 (FGH Blue Fish)	>	Aug
Uranium (total)	AEMP-DS-02 (Marine Dock)	>	Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-09 (End of Facility)	>	Mar
Zinc (total)	AEMP-DS-02 (Marine Dock)	>	Jul, Aug
	AEMP-DS-03 (Island 3)	>	Jul
	AEMP-DS-04 (Refinery)	>	Jul, Aug
	AEMP-DS-05 (Radar North)	>	Jul
	AEMP-DS-06 (FGH Blue Fish)	>	Mar, Jul
	AEMP-DS-07 (FGH Ramparts)	>	Jul, Aug
	AEMP-DS-08 (Radar South)	>	Jul, Aug
	AEMP-DS-09 (End of Facility)	>	Jul

6.1.2.1 Control Limit exceedances Discussion

Several sites had concentrations above control limits while no concentrations below control limits were measured in 2024. This is not consistent with observations made in 2023, when fewer metals exceeded control limits and some concentrations at near-field downstream sites were below the respective control limit. Most total metal concentrations above the control limit in 2024 occurred at near-field downstream sites in spring and summer (July and August) when flows and sediment load are elevated.

This is consistent with previous monitoring years apart from 2023, which had unusually low total metal concentrations during spring and summer sampling. It is important to note that concentrations above control limits were not consistently above the UCL at all downstream sites, and data collected from the new upstream sampling location at Norman Wells (AEMP-US-03) was not incorporated into control limit calculations because of limited data availability (five sampling events in 2023 and 2024). This is the closest site to Norman Wells that is upstream from the NWO, and concentrations observed at this site were similar to those at near-field sites downstream from the NWO (Appendix F; Figures F-12, F-26, and F-40). Based on these results, the total metal concentrations in the Mackenzie River may be elevated during higher flow periods but there is no indication that this is related to site activities. Data from the AEMP-US-03 site are expected to be included in the control limit calculations during the 2025 AEMP and will assist in verifying results observed in 2024. Flow-corrected control limits may more accurately compare upstream and downstream sites in the Mackenzie River, however, development of these control limits is limited by weak correlations between water chemistry and discharge in 2024 (see Section 5.1.2).

The dissolved fraction concentrations of metal KIPs were within control limits in the Mackenzie River, whereas dissolved barium and copper were above the UCL at the lower Bosworth Creek (AEMP-DS-01) location in July. Dissolved copper at this location has periodically exceeded the UCL in July and August since 2019, but an increase in the reportable detection limit in 2021 resulted in censored results (results below the detection limit) during lower flow periods. The more recent detection limit for copper is near the calculated UCL because the current UCL is based on historical data collected before the detection limit increased (Appendix E). Dissolved barium at the lower Bosworth Creek location exceeds the UCL by 0.001 mg/L and is consistent with concentrations measured historically at this location.

In the Mackenzie River, indicator parameters periodically exceeded control limits primarily at the marine dock, Island 3, and end of facility sampling locations, as well as the Blue Fish sampling location near Fort Good Hope. Measurements at the Blue Fish location near Fort Good Hope are regularly outside control limits in 2023 and 2024 most likely because it is downstream from the confluence of the Mackenzie and Ramparts Rivers (Figure 2). Indicator parameters may have higher concentrations in the Ramparts River based on water chemistry measured in Bosworth Creek, given that both are tributaries to the Mackenzie River and similar conditions may exist. This may explain the higher concentrations of indicator KIPs in the Mackenzie River downstream from the confluence at the AEMP-DS-06 sampling location.

All indicator KIPs exceeded control limits at least once during the 2024 AEMP with chloride exceeding the control limit since August 2022. Control limits in Bosworth Creek in 2024 were based on historical upstream data from a discontinued monitoring location (AEMP-04) and a statistically significant upward trend may be present (see 6.1.4). Chloride concentrations measured at the new upstream locations also exceeded the established control limits in 2024 suggesting that the elevated chloride is not related to site activities (Appendix F; Figure F-13 and F-14). Data available from the new upstream monitoring locations on Bosworth Creek are expected to meet criteria for incorporation into the control limit calculation in 2025 AEMP.

The potential upward trend for chloride concentrations in Bosworth Creek must be considered when updated control limits are calculated.

6.1.3 Hydrochemical Type – Major Ions

Hydrochemical type is visually represented in Piper plots in Appendix G. Piper plots provide a visual tool to describe ionic composition of water to compare among water types and identify mixing between different sources. Results for the Mackenzie River show that water quality is predominantly a calcium-magnesium-bicarbonate type except for AEMP-DS-06 (Fort Good Hope), which shows water quality as a calcium-magnesium-sulphate type for one sampling season. Furthermore, other sampling seasons for the Fort Good Hope and Midway sites are characterized as a mixed water type. Mixed water types indicate no single anion or cation dominates the system and can be visually represented by a point in the centre of the piper plots. The Fort Good Hope sampling site is near a stream that flows into the Mackenzie River which could have caused the difference in water type compared with the other sites. Overall, with the exception of AEMP-DS-06, which is likely influenced by water from Ramparts River, there is no notable variation in hydrochemical type between upstream and downstream locations on the Mackenzie River.

Water quality in Bosworth Creek is predominantly a mixed type with some calcium predominance and no notable variation between locations upstream and downstream or among sampling seasons. Overall, results are consistent with findings from 2023.

6.1.4 Trend Summary

Mann-Kendall statistical summaries are presented in Appendix F and statistically significant trends are summarized in Table 6-3.

Table 6-3: Surface Water Statistically Significant Trends

KIP	Sample Location(s)	Trend Directions
Chloride	AEMP-DS-01 (Lower Bosworth Creek) AEMP-DS-06 (Fort Good Hope)	Increasing Decreasing
Magnesium	AEMP-DS-06 (Fort Good Hope)	Increasing
Cadmium (Dissolved)	AEMP-DS-06 (Fort Good Hope)	Increasing
Cadmium (Total)	AEMP-US-02 (10 Mile)	Decreasing
Arsenic (Total)	AEMP-US-02 (10 Mile)	Decreasing
Copper (Total)	AEMP-US-02 (10 Mile)	Decreasing
Iron (Total)	AEMP-DS-01 (Lower Bosworth Creek)	Decreasing
Nickel (Total)	AEMP-US-02 (10 Mile)	Decreasing
Zinc (Total)	AEMP-US-02 (10 Mile)	Decreasing

Several total metals, including cadmium, arsenic, copper, nickel, and zinc are decreasing significantly at the 10 Mile site (AEMP-US-02) upstream from the NWO. Trends in the upstream data wouldn't be attributed to NWO site operations but may suggest that total metal concentrations are decreasing within the Mackenzie River. The 2024 chloride concentrations at Mackenzie River downstream appear consistent with upstream concentrations, however the overall chloride concentrations throughout the sampling seasons at Fort Good Hope are slightly lower than 2023. Magnesium and dissolved cadmium concentrations have increasing trends at the Fort Good Hope sampling site, however only two years of data (eight sampling events) are available at this site and trends may be a result of limited data over time.

Chloride is increasing significantly at the Lower Bosworth Creek (AEMP-DS-01) site, which is consistent with trends from 2023. The magnitude of chloride concentrations at the downstream site is similar to upstream conditions and below water quality criteria in 2024. Bosworth Creek has limited data at upstream sites, which limits the upstream trend analysis in Bosworth Creek. There's evidence of increasing trends for chloride and calcium at the Upstream Bosworth Creek (AEMP-US-04) site, which isn't identified by the trend analysis because of the short sampling period for this site specifically (six water quality measurements to date). Review of groundwater monitoring data near Bosworth Creek was recommended in 2023 and data is limited by low water levels precluding sampling from some existing wells. New groundwater monitoring wells were installed as part of the surveillance network program (SNP) in 2024 to improve the groundwater monitoring network, however, if low water levels persist then groundwater data may remain limited. Chloride concentrations in Bosworth Creek (at upstream and downstream sampling locations) began to increase in 2021 (Table 2; TRSA 2023) while groundwater wells between the CPF and Bosworth Creek had chloride concentrations below that observed in Bosworth Creek up to and including 2024 (TRSA 2025a, TRSA 2025b). Taken together, the groundwater and surface water results indicate that the cause of the increasing chloride trend in Bosworth Creek is upstream from the NWO, as well as the farthest upstream sampling location. Since the maximum chloride concentration in Bosworth Creek (39 mg/L) remains below the CCME FAL guideline (120 mg/L), and the increasing trend may be considered an early warning of potential concerns in the future.

6.1.5 Semi-permeable Membrane Device PAH Results

All PAH and aPAH concentrations are below the applied guidelines, when available, which is consistent with findings for previous PAH analyses. In 2023 and 2024, SPMD analyses did achieve lower detection limits for PAHs and aPAHs compared to grab sample analyses allowing for detectable concentrations rather than all results being below the laboratory reportable detection limit. Improved PAH/aPAH detection has enabled a more detailed understanding of PAH concentrations in the Mackenzie River and Bosworth Creek to better describe the AES.

Total PAH concentrations measured in SPMDs, including PAHs and aPAHs, are summarized for the Mackenzie River and Bosworth Creek in Table 6-4. The concentrations of individual PAHs and aPAHs are provided in Table 6 and Table 7, respectively. Profiles of the average PAH and aPAH concentrations at each site sampled in 2023 and 2024 are also presented for sites on the Mackenzie River upstream from the NWO (Figure 6-1), downstream from the NWO (Figure 6-2), and on Bosworth Creek (Figure 6-3).

The total PAH concentrations in the Mackenzie River were highest near the marine dock (AEMP-DS-02) and refinery (AEMP-DS-04) sampling locations in 2024. Total PAH concentrations at other downstream near-field sites such as Island 3 (AEMP-DS-03) were low and similar to concentrations measured near Fort Good Hope (AEMP-DS-06 and AEMP-DS-07). Overall, results in 2024 are consistent with those observed in 2023, however, concentrations at the marine dock were substantially higher compared to 2023. Elevated concentrations at the marine dock and refinery may be a result of known natural seeps near these locations. Passive samplers were deployed over three seasons at three upstream locations in 2024 and measured total PAH concentrations at these sites were similar to those observed at other downstream near-field sites including those near Radar Island (AEMP-DS-05 and AEMP-DS-08) and the end of the facility (AEMP-DS-09). Apart from the marine dock and refinery locations, total PAH concentrations measured in 2024 are within the same range or slightly higher than as those measured from SPMDs in the Athabasca River near the oil sands region (Lévesque et al 2023). Therefore, the results suggest that background PAH concentrations in the Mackenzie River are higher than those present farther upstream in the watershed in the Athabasca River and Slave River.

The total PAH concentrations in Bosworth Creek were similar to midstream locations in the Mackenzie River with the highest concentrations occurring in the middle sampling reach of Bosworth Creek (AEMP-US-04) and the lowest concentrations measured at the upper Bosworth Creek site (AEMP-US-05). Concentrations at the lower Bosworth Creek site (AEMP-DS-01) were similar to concentrations observed in the Mackenzie River upstream from the NWO (Table 6-4). Notably, total PAH concentrations in Bosworth Creek in 2024 were lower compared to 2023.

Table 6-4: Polycyclic Aromatic Hydrocarbon (PAH) Summary in the Mackenzie River and Bosworth Creek in 2024

Watercourse	Sample Location	Deployment Period	Total PAHs (µg/L)	Pyrogenic Index
Mackenzie River	AEMP-DS-02 (Marine Dock)	Spring	0.729	0.002
	AEMP-DS-02 (Marine Dock)	Summer	1.447	0.001
	AEMP-DS-02 (Marine Dock)	Fall	7.994	0.001
	AEMP-DS-03 (Island 3)	Spring	0.044	0.020
	AEMP-DS-03 (Island 3)	Summer	0.059	0.024
	AEMP-DS-04 (Refinery)	Spring	0.683	0.002
	AEMP-DS-04 (Refinery)	Summer	0.501	0.004
	AEMP-DS-04 (Refinery)	Fall	0.613	0.006

Watercourse	Sample Location	Deployment Period	Total PAHs (µg/L)	Pyrogenic Index
	AEMP-DS-05 (Radar North)	Spring	0.061	0.015
	AEMP-DS-05 (Radar North)	Fall	0.308	0.008
	AEMP-DS-06 (FGH – Blue Fish)	Summer	0.043	0.019
	AEMP-DS-07 (FGH - Ramparts)	Summer	0.065	0.013
	AEMP-DS-07 (FGH - Ramparts)	Fall	0.094	0.018
	AEMP-DS-08 (Radar South)	Spring	0.054	0.019
	AEMP-DS-08 (Radar South)	Summer	0.184	0.009
	AEMP-DS-08 (Radar South)	Fall	0.293	0.007
	AEMP-DS-09 (End of Facility)	Spring	0.066	0.013
	AEMP-DS-09 (End of Facility)	Summer	0.075	0.023
	AEMP-DS-09 (End of Facility)	Fall	0.098	0.015
	AEMP-US-01 (Midway Island)	Spring	0.048	0.038
	AEMP-US-01 (Midway Island)	Summer	0.175	0.021
	AEMP-US-01 (Midway Island)	Fall	0.216	0.018
	AEMP-US-02 (10 Mile Island)	Spring	0.064	0.022
	AEMP-US-02 (10 Mile Island)	Summer	0.101	0.017
	AEMP-US-02 (10 Mile Island)	Fall	0.122	0.016
	AEMP-US-03 (Norman Wells Upstream)	Spring	0.061	0.030
	AEMP-US-03 (Norman Wells Upstream)	Summer	0.132	0.016
	AEMP-US-03 (Norman Wells Upstream)	Fall	0.126	0.022
Bosworth Creek	AEMP-DS-01 (Lower Bosworth Creek)	Spring	0.096	0.042
	AEMP-DS-01 (Lower Bosworth Creek)	Summer	0.135	0.041
	AEMP-DS-01 (Lower Bosworth Creek)	Fall	0.171	0.045
	AEMP-US-04 (Bosworth Creek)	Spring	0.152	0.008
	AEMP-US-04 (Bosworth Creek)	Summer	0.123	0.007
	AEMP-US-04 (Bosworth Creek)	Fall	0.149	0.004
	AEMP-US-05 (Upper Bosworth Creek)	Spring	0.068	0.012
	AEMP-US-05 (Upper Bosworth Creek)	Summer	0.054	0.014
	AEMP-US-05 (Upper Bosworth Creek)	Fall	0.077	0.008

Alkylated PAHs contributed most to the total concentrations measured in 2024 in the Mackenzie River and Bosworth Creek (Figure 6-1 to Figure 6-3). Alkylated dibenzothiophenes, fluoranthenes/pyrenes, naphthalenes, and phenanthrenes/anthracenes were the most abundant PAHs in all sites in the Mackenzie River and Bosworth Creek. In fall 1995, Parrott et al. (1999) documented higher contributions of naphthalenes and fluoranthene in SPMDs deployed in the Mackenzie River upstream and downstream from the NWO compared to those deployed in effluent from the NWO. Although alkylated fluoranthene concentrations were elevated in 2023, the concentration of these compounds in 2024 were low at all sites in the Mackenzie River and Bosworth Creek.

High proportions of aPAHs (namely naphthalenes and phenanthrenes/anthracenes) also contributed to low PI values in the Mackenzie River and Bosworth Creek in 2024. The low PI indicates that PAHs in both watercourses are from a petrogenic origin typical of crude heavy oils and fuels rather than atmospheric deposition from combustion (Lévesque et al 2023). This is consistent with findings from SPMDs deployed in 1995 (Parrott et al. 1999).

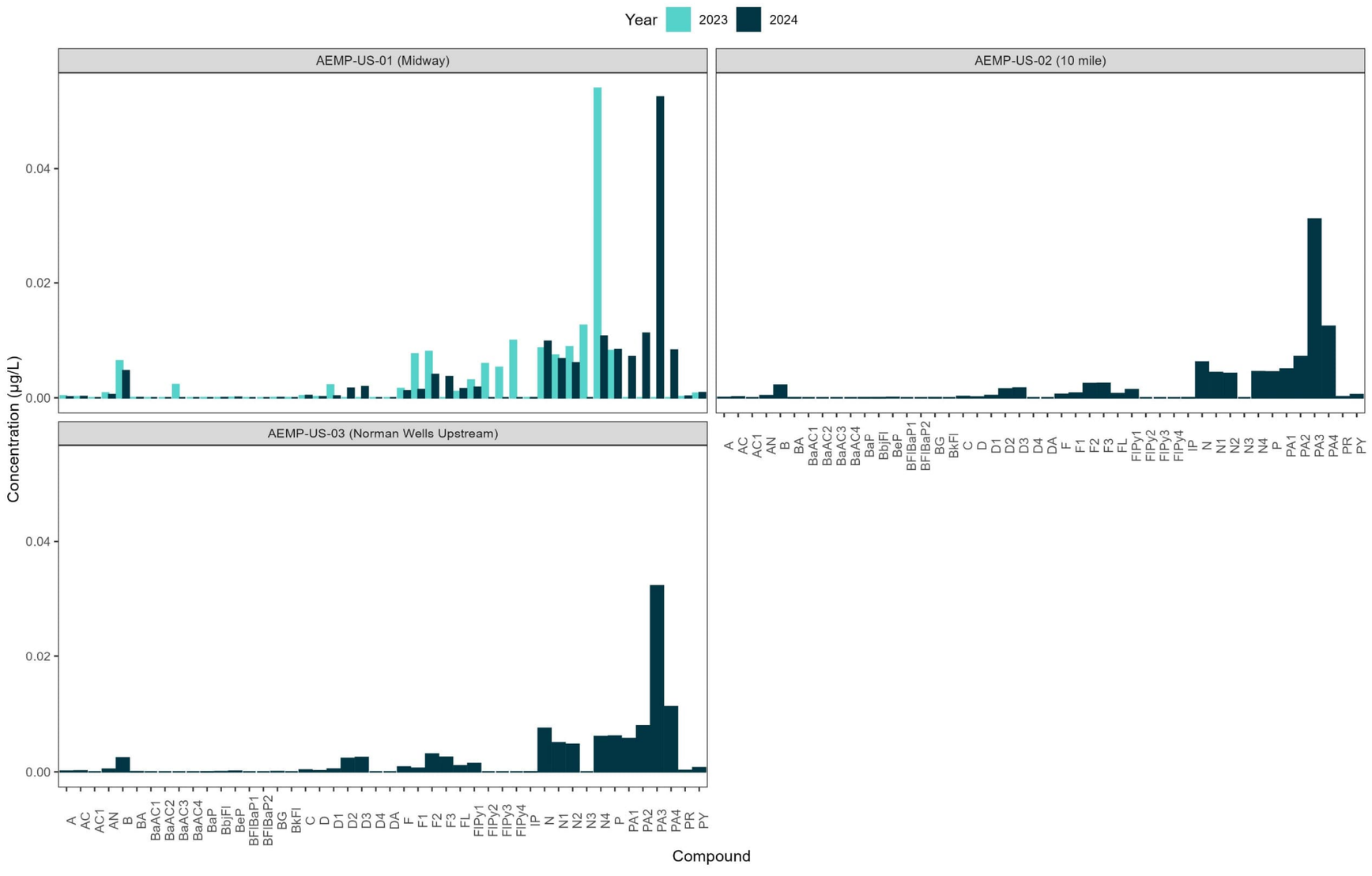

Figure 6-1: Profiles of PAH and aPAH Concentrations measured in SPMDs deployed in the Mackenzie River upstream from the NWO in 2023 and 2024 (Acronyms defined in Table 3-2)

Figure 6-2: Profiles of PAH and aPAH Concentrations measured in SPMDs deployed in the Mackenzie River downstream from the NWO in 2023 and 2024 (Acronyms defined in Table 3-2)

Figure 6-3: Profiles of PAH and aPAH Concentrations measured in SPMDs deployed in Bosworth Creek in 2023 and 2024 (Acronyms defined in Table 3-2)

6.2 Small-bodied Fish Sampling

Slimy sculpin were collected from the three sampling reaches in Bosworth Creek from September 11 to 17, 2025 using a backpack electrofisher set to 12% duty cycle, 60 Hz pulse frequency, and 250 volts. A total of 157 slimy sculpin were retained from Bosworth Creek for the fish health assessment in 2024 (Table 8). Electrofishing effort and the number of slimy sculpin captured from each fishing reach in 2024 are summarized in Table 6-5. The lowest catch rate was at the AEMP-FS-01 sampling location, but it is important to note that additional sampling occurred at this site, as well as AEMP-FS-03, to target larger individuals for liver protein analyses. In general, slimy sculpin collected at the AEMP-FS-02 site appeared larger, resulting in a sufficient number of mature individuals with the least sampling effort. Non-target fish species observed in Bosworth Creek in 2024 included juvenile bluefish (a.k.a. Arctic grayling; *Thymallus arcticus*), loche (a.k.a. burbot; *Lota lota*), jackfish (a.k.a. northern pike; *Esox lucius*), pickerel (a.k.a. walleye); *Sander vitreus*), and longnose sucker (*Catostomus Catostomus*), as well as all life-stages of lake chub (*Couesius plumbeus*).

Table 6-5: Slimy sculpin fishing effort and catch rates in Bosworth Creek during 2024 AEMP

Parameter	AEMP-FS-02 (Exp. Site)	AEMP-FS-01 (Ref. Site 1)	AEMP-FS-03 (Ref. Site 2)
Total Effort (seconds)	5,155	12,901	7,827
Number of Slimy Sculpin (>50 mm total length)	47	52	54
Number of Mature Females Retained	24	26	29
Number of Mature Males Retained	21	19	15
Total Number of Slimy Sculpin Caught	77	109	80
Total slimy sculpin CPUE	1.49	0.84	1.02

Note: Catch-per-unit-effort (CPUE) denotes the number of slimy sculpin captured per 100 seconds of electrofishing effort

The length-frequency distribution of slimy sculpin retained for analysis in 2024 is compared with the distribution observed in 2023 in Figure 6-4. In 2024, preference was given to individuals over 55 mm long and no slimy sculpin less than 50 mm were retained given that this was identified as the length-at-maturity for lower Bosworth Creek in 2023 (TRSA 2024). Consequently, only six immature slimy sculpin were retained from AEMP-FS-01, one immature slimy sculpin was retained from AEMP-FS-02, and eight immature fish were retained from AEMP-FS-03. These individuals, as well as those with parasites present in the body cavity, were removed from the fish health assessment given that the physiological processes influencing gonad and liver size will be altered in these individuals. The total number of mature males and females available for the fish health analyses for each site in 2024 are provided in Table 6-5. More females were captured at each site in 2024, which is consistent with results observed in 2023. Immature individuals retained in 2024 were included in the composite samples submitted for PAH analysis.

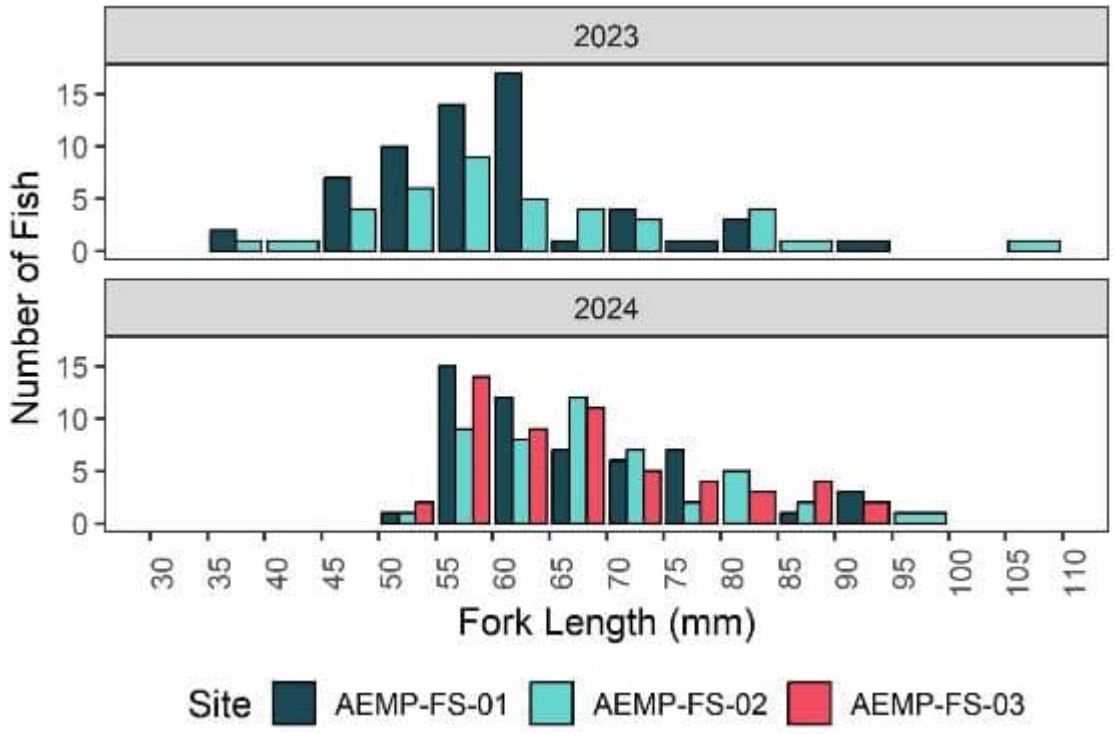

Figure 6-4: Length-Frequency distribution of slimy sculpin captured from Bosworth Creek in 2023 and 2024

6.2.1 Bosworth Creek Slimy Sculpin Health Analysis

Summary statistics for metrics used to assess fish health and energy allocation for slimy sculpin are provided in Table 9. The sample mean and the distribution of observations for fish length, body weight, condition factor, HSI, and GSI for females and males collected from Bosworth Creek in 2024 are presented in Figure 6-5. Population estimates for these metrics were compared among the reference (AEMP-FS-01 and AEMP-FS-03) and experimental (AEMP-FS-02) sampling reaches and statistical results of these comparisons are provided in Table 6-6 and Table 10. Notably, these comparisons are based only on mature fish and individuals with pathological observations (e.g. parasites present in body cavity) were removed resulting in an unbalanced comparison among sites.

Male slimy sculpin from the experimental site (AEMP-FS-02) were significantly heavier than fish captured from the AEMP-FS-03 reference site. Although males from AEMP-FS-02 were heavier than slimy sculpin from the AEMP-FS-01 reference, this difference between sites was not statistically significant (Table 6-6 and Table 10). Male slimy sculpin condition was significantly higher at the experimental site compared with both reference sites, although the percent differences remained below the CES of 10%. Alternatively, length, weight, and condition of female sculpin were similar among sites. Condition provides a metric relating to overall energy availability where fish having higher condition indicating that more energy available to carry out life processes such as growth.

Consequently, the higher male condition at the experimental site suggests higher energy availability within this sampling reach. Higher condition within the AEMP-FS-02 sampling reach was also documented in 2023. Although male condition was 7.3% higher at AEMP-FS-02, only female slimy sculpin had statistically higher condition during the 2023 AEMP (TRSA 2024).

The HSI also provides a measure of energy availability given that much of the fish's energy stores are retained in the liver (e.g. lipid and glycogen storage). In 2023, the HSI at AEMP-FS-02 was elevated compared with the reference site and the percent difference for HSI exceeded the CES of 25% for male slimy sculpin. The results in 2024 act as verification that liver size relative to body weight is higher (based on HSI) at the experimental site given that the percent difference for males exceeded the CES for a second consecutive year. Statistical comparisons among sites also supported that male slimy sculpin HSI was higher at the AEMP-FS-02 experimental site compared with the AEMP-FS-03 reference. Notably, females consistently had higher HSI than males within each sampling reach. Vitellogenin is a protein essential for egg development that is produced and retained in the liver of fish, therefore higher HSI observed for female slimy sculpin may be related to the production of vitellogenin for egg production. It is notable that one slimy sculpin had a large tumor growing from the liver at AEMP-FS-02 (Photo 6-1). This individual was identified as an outlier within the dataset and removed from statistical analyses given that the tumor increased the liver size relative to other sculpin within the population.

The GSI of slimy sculpin in 2024 was similar among sites for both males and females and percent differences were below the CES of 25%. These results suggest that energy allocated for reproduction is similar among sites in 2024 (Table 6-6).

Table 6-6: Mean morphometric and fish health measurements for slimy sculpin collected from Bosworth Creek in 2024

Parameter	Sex	AEMP-FS-02 (Exp. Site)		AEMP-FS-01 (Ref. Site 1)		AEMP-FS-03 (Ref. Site 2)		Percent Differences for AEMP-FS-02	Sign. Difference	Power (1-β)
		n[1]	Mean ± SE	n[1]	Mean ± SE	n[1]	Mean ± SE			
Length (mm)	Female	24	67.0 ± 1.75	26	68.5 ± 2.15	29	71.9 ± 1.98	FS-01: -2.1% FS-03: -6.8%	No; p = 0.208	0.34
	Male	21	70.0 ± 2.31	19	64.2 ± 1.88	15	63.3 ± 2.20	FS-01: 9.1% FS-03: 10.6%	No; p =0.051	0.61
Weight (g)	Female	24	2.634 ± 0.238	26	2.679 ± 0.249	29	3.178 ± 0.247	FS-01: -1.7% FS-03: -17.1%	No; p =0.185	0.36
	Male	21	3.248 ± 0.363	19	2.309 ± 0.255	15	2.186 ± 0.300	FS-01: 40.7% FS-03: 48.6%	Yes; p <0.05 FS-02 > FS-03	0.77
Condition Factor	Female	24	0.83 ± 0.02	26	0.79 ± 0.02	29	0.81 ± 0.01	FS-01: 5.5% FS-03: 2.1%	No; p[2] =0.20	---
	Male	21	0.88 ± 0.01	19	0.83 ± 0.01	15	0.80 ± 0.03	FS-01: 6.4% FS-03: 9.6%	Yes; p[3] <0.01 FS-02 > FS-01 and FS-03	0.84
Hepatosomatic Index (HSI)	Female	24	2.57 ± 0.14	26	2.27 ± 0.14	29	2.17 ± 0.10	FS-01: 12.9% FS-03: 18.5%	No; p = 0.078	0.53
	Male	20[4]	2.07 ± 0.16	19	1.58 ± 0.10	15	1.50 ± 0.14	FS-01: 30.5% FS-03: 37.6%	Yes; p <0.05 FS-02 > FS-03	0.73
Gonadosomatic Index (GSI)	Female	24	1.51 ± 0.07	26	1.48 ± 0.09	29	1.67 ± 0.08	FS-01: 2.0% FS-03: -9.4%	No; p = 0.20	0.35
	Male	21	2.04 ± 0.08	19	1.83 ± 0.10	15	1.83 ± 0.13	FS-01: 11.3% FS-03: 11.5%	No; p = 0.236	0.25

Notes:

Superscript 1 – 'n' denotes sample size of the respective experimental group

Superscript 2 – denotes that the associated p-value is based on a Fisher-Pitman permutation test because assumptions for the ANOVA test were not met.

Superscript 3 – denotes that a square transformation was applied to the dataset to meet assumptions of normality and/or homoscedasticity for the ANOVA test.

Superscript 4 – Outlier male AEMP-FS-02-23 was removed from AEMP-FS-02 site for HSI statistical comparison. Means presented includes outlier.

Photo 6-1: Tumor observed on liver of slimy sculpin captured from the AEMP-FS-02 experimental site

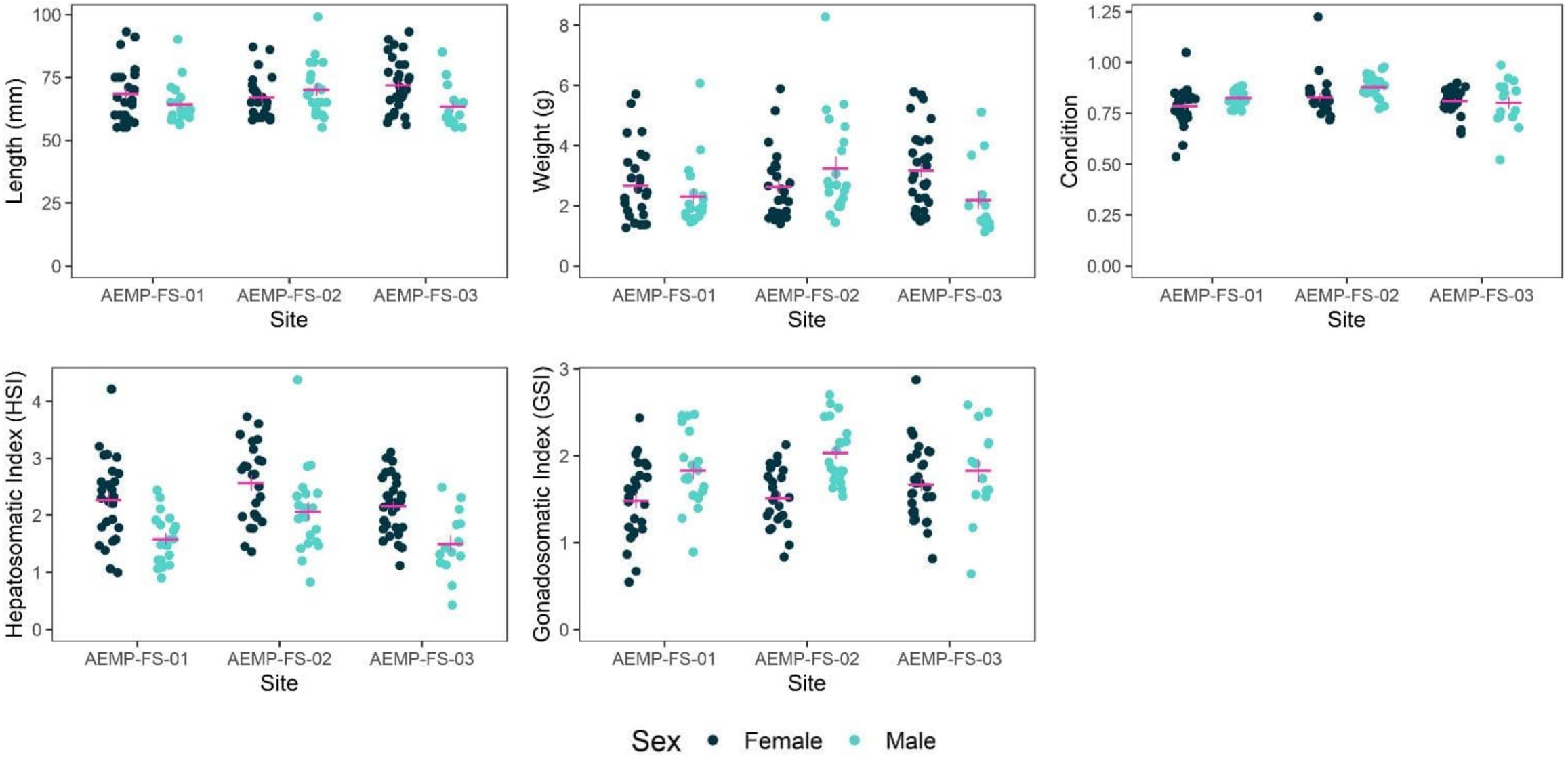

Figure 6-5: Total length (mm), body weight (g), fish condition, hepatosomatic index (HSI), gonadosomatic index (GSI) of Bosworth Creek slimy sculpin collected during the 2024 AEMP. Pink horizontal line indicates mean for each site and sex, while pink vertical line indicates standard error.

Results of statistical analyses investigating energy availability and allocation through the ANCOVA approach are summarized in Table 6-7 and Table 10. There were no significant interactions between sampling reaches and the relationship with fish length or body weight in 2024. Consequently, it was assumed that each site had parallel slopes and the distance between regression lines was used to determine site differences. Linear regression relationships between body weight and length, liver weight and body weight, and gonad weight and body weight in 2024 are presented for each sampling reach in Figure 6-6.

The relationship between body weight and fish length verified results based on fish condition suggesting that overall condition of male sculpin is higher at the downstream sampling location (Table 6-7). While statistical results for fish condition indicate that male fish from the experimental site had significantly higher condition than both reference sites, the ANCOVA analysis indicated that overall condition of males from AEMP-FS-02 was only significantly higher than fish from the AEMP-FS-03 reference site. The percent differences among the reference sites and the experimental site was below the CES in 2024 (Table 6-7). These results are similar to those observed in 2023, however, in 2023 only female slimy sculpin had statistically higher condition at the experimental site (TRSA 2024). Percent differences in 2023 were also similar to those observed in 2024 and indicated higher condition at the experimental site, as well as percent differences below the action level CES. Based on both years of the SFS, the energy availability at the experimental site (AEMP-FS-02) is higher than the upstream references but site differences do not exceed the CES. These results are not indicative of adverse effects on the slimy sculpin at the experimental site given that condition is a commonly used metric for determining fish health, with higher condition indicating better fish health.

Liver weight relative to body weight was highest at the experimental site (AEMP-FS-02) for both males and females in 2024, however, no statistical differences were observed among sites (Table 6-7). In addition, percent differences were below the CES for both reference sites compared with the experimental site. In contrast, the liver weight (relative to body weight) in 2023 for male slimy sculpin from AEMP-FS-02 was significantly higher than that of fish from the AEMP-FS-01 reference and the percent difference exceeded the CES. Results from 2024 do not verify a site effect suggesting higher liver weight at the experimental site given that action level thresholds were not exceeded in the ANCOVA analysis, however, there is evidence that liver sizes relative to body weight are higher at the experimental site. This potential effect is particularly evident for male slimy sculpin. Liver weight relative to body weight helps quantify the energy allocated to survival (e.g. stress response) and contaminant detoxification, therefore these results suggest that slimy sculpin at the experimental site allocate more resources to these processes. Liver composition is discussed in this context further in Section 6.2.1.1.

Gonad weight relative to body weight was similar among sites with no statistically significant differences observed in 2024 (Table 6-7). Percent differences were below the action level CES for both males and females. These results are consistent with those observed for male slimy sculpin in 2023, however a significant interaction between gonad weight and site was identified for females in 2023. The 2024 results therefore suggest that potential site differences in 2023 could be a statistical artifact rather than a true site effect.

Table 6-7: Statistical results of analysis of covariance (ANCOVA) tests for slimy sculpin assessed from Bosworth Creek during the 2024 AEMP

Parameter	Sex	AEMP-FS-02 (Exp. Site)		AEMP-FS-01 (Ref. Site 1)		AEMP-FS-03 (Ref. Site 2)		Percent Differences for AEMP-FS-02	Sign. Diff.	Sign. Interaction	Power (1-**β**)
		n[1]	Adj. Mean	n[1]	Adj. Mean	n[1]	Adj. Mean				
Body Weight (Length Covariate)	Female	24	2.652	26	2.515	29	2.624	FS-02:FS-01 = 5.4 FS-02:FS-03 = 1.1	No; p = 0.155	No; p = 0.299	0.40
	Male	21	2.459	19	2.336	15	2.270	FS-02:FS-01 = 5.2 FS-02:FS-03 = 8.3	Yes; p <0.05 FS-02>FS-03	No; p = 0.646	0.63
Liver Weight (Body Weight Covariate)	Female	24	0.065	26	0.056	29	0.054	FS-02:FS-01 = 14.8 FS-02:FS-03 = 20.5	No; p = 0.069	No, p = 0.877	0.55
	Male	20[2]	0.041	19	0.036	15	0.033	FS-02:FS-01 = 14.8 FS-02:FS-03 = 23.6	No; p = 0.202	No; p = 0.726	0.36
Gonad Weight (Body Weight Covariate)	Female	24	0.039	26	0.037	29	0.042	FS-02:FS-01 = 4.8 FS-02:FS-03 = -7.3	No; p = 0.299	No; p = 0.909	0.27
	Male	21	0.045	19	0.043	15	0.042	FS-02:FS-01 = 6.8 FS-02:FS-03 = 7.4	No; p = 0.669	No; p = 0.221	0.12

Notes:

All weights are provided in grams (g).

Bold text indicates statistically significant differences between sites and percent differences above critical effect sizes (CES).

Superscript 1 – 'n' denotes sample size of the respective experimental group

Superscript 2 - Outlier male AEMP-FS-02-23 was removed from AEMP-FS-02 site for liver weight statistical comparison.

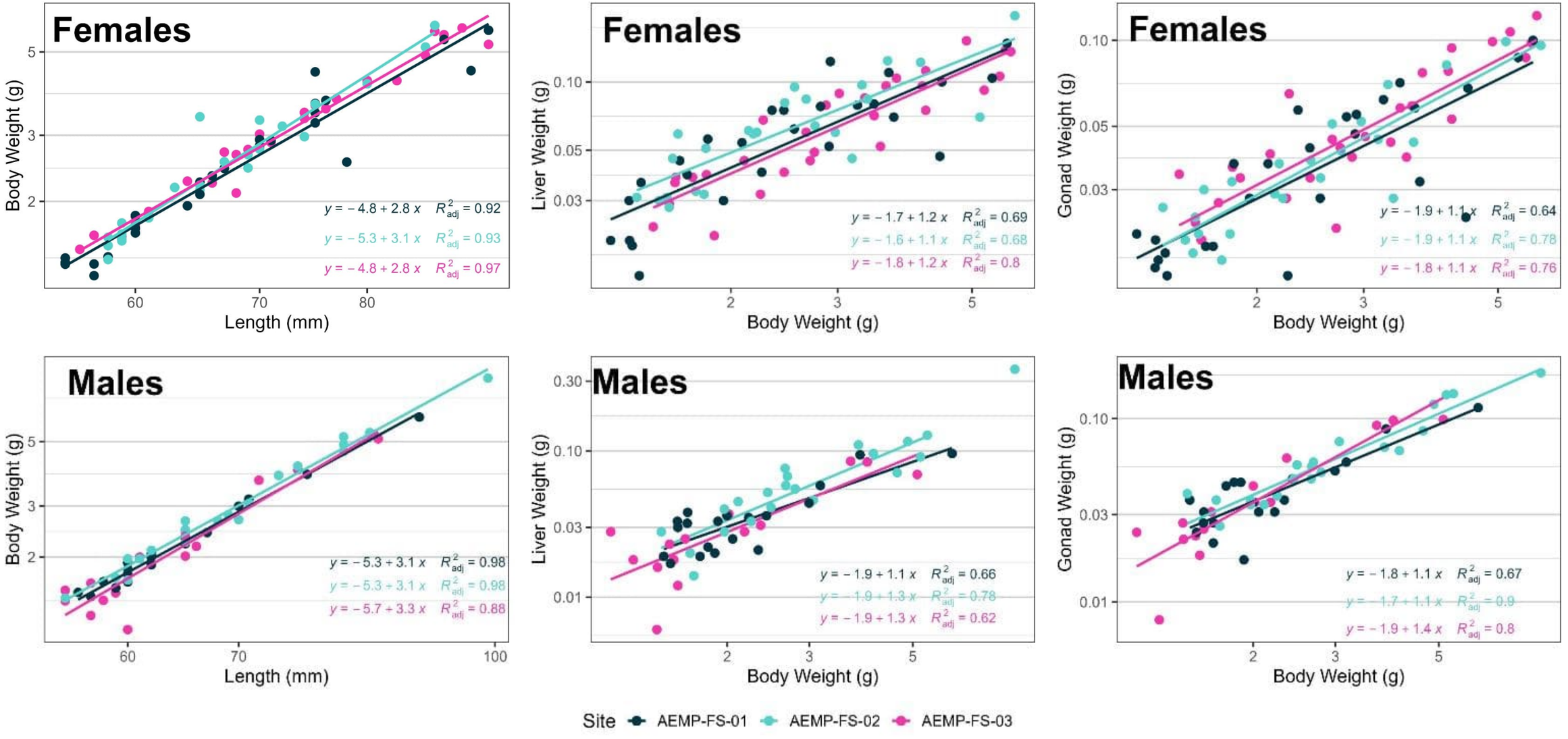

Figure 6-6: Relationships of body weight versus total length (Left), liver weight versus body weight (Centre), and gonad weight versus body weight (Right) for slimy sculpin captured from Bosworth Creek during the 2024 AEMP

The power of the ANCOVA and ANOVA are somewhat limited given that effect size for the site effect is relatively low for comparing liver and gonad weights (relative to body weight) among sites. Based on the power analysis using the observed effect sizes, over 100 slimy sculpin would need to be sampled from each reach to obtain the target power of 0.90. Removing this many individuals from the population in a single sampling year would most likely cause detrimental effects to the slimy sculpin population in Bosworth Creek. Pooling sampling events between monitoring years could be a suitable method for increasing statistical power provided that no differences occur between sampling years. This can be tested using a repeated-measures ANOVA comparing fish morphometrics (e.g. length, weight, condition, liver weight, gonad weight) between sampling years. If no site differences are identified it can be assumed that fish morphometrics do not change between years and measurements can be assumed to have come from the same population. Pooling samples across years does introduce time as a confounding variable within the site comparisons. However, if health metrics do not change over time, this approach could improve statistical power without increasing lethal sampling pressure on the slimy sculpin population. Notably, if there are temporal differences identified at any of the sampling locations, the data cannot be pooled given that temporal trends may influence site comparisons. Fish morphometric data, including 2023 and 2024, are presented in Figure 6-7 to provide a visual comparison among sites. Further statistical analyses comparing this data over time were not completed in 2024 given that this approach has not been discussed with stakeholders and regulators and this analysis was not within the scope of the 2024 AEMP.

6.2.1.1 Mixed-function Oxygenase Protein Analysis

The CYP1A1 protein content and total hepatic protein was compared among sites for each sex independently using an ANOVA approach (Table 10). Only eight males from AEMP-FS-03 had sufficient liver sizes for the protein analysis in 2024, therefore, site comparisons for male slimy sculpin were unbalanced among sites (Table 6-8). Based on these analyses, the CYP1A1 protein content is higher in male slimy sculpin livers obtained from the experimental site compared to the AEMP-FS-01 reference site. Alternatively, total protein was generally lower in the livers of slimy sculpin from the experimental site, but only female slimy sculpin from AEMP-FS-02 had significantly lower protein content compared to females from the AEMP-FS-01 reference site (Table 6-8).

Larger liver sizes are generally considered an indication of increased energy allocation to the liver to cope with contaminant exposure in EEM, however, the overall tissue composition should be considered. Results from 2024 suggest that the level of the detoxifying protein CYP1A1 at the experimental site is higher than the reference sites. Alternatively, total protein at this site is lower than the reference sites.

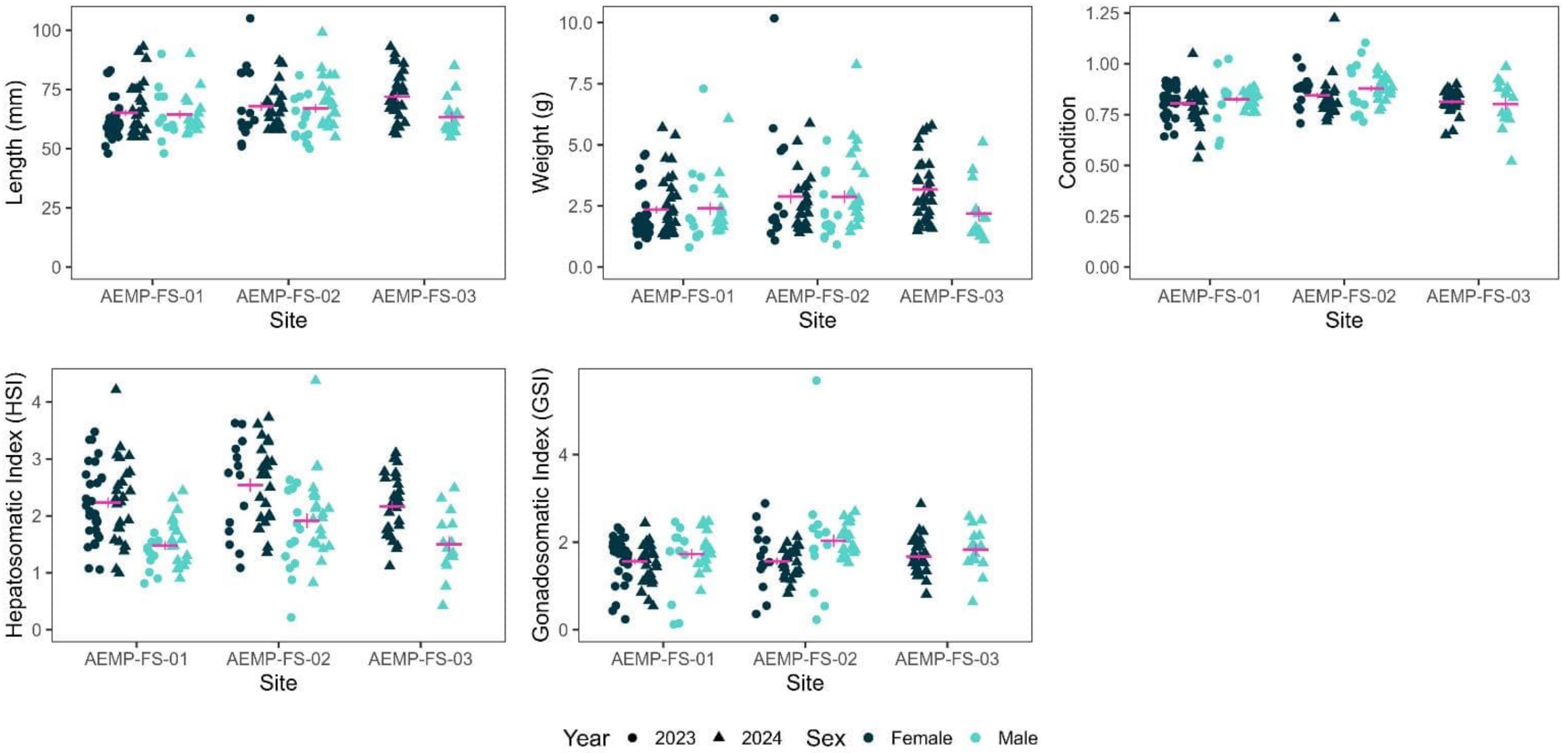

Figure 6-7: Total length (mm), body weight (g), fish condition, hepatosomatic index (HSI), gonadosomatic index (GSI) of Bosworth Creek slimy sculpin collected during the 2023 and 2024 AEMP. Pink horizontal line indicates global mean across years for each site and sex, while pink vertical line indicates standard error.

Table 6-8: Liver protein statistical results for site comparisons during the 2024 AEMP

Parameter	Sex	AEMP-FS-02 (Exp. Site)		AEMP-FS-01 (Ref. Site 1)		AEMP-FS-03 (Ref. Site 2)		Percent Differences for AEMP-FS-02	Statistical Difference	Power (1-β)	CES Range
		n[1]	Mean ± SE	n[1]	Mean ± SE	n[1]	Mean ± SE				
CYP1A (pg/mg protein)	Female	10	16.23 ± 1.40	10	13.48 ± 1.08	10	15.70 ± 0.58	FS-01: 20.4% FS-03: 3.4%	No; p[2] = 0.101	0.50	8.80 to 20.39
	Male	10	13.65 ± 0.77	10	10.64 ± 0.51	8	12.13 ± 0.77	FS-01: 28.3% FS-03: 12.6%	Yes; p <0.05 FS-02>FS-01	0.82	7.35 to 15.25
Total Protein (µg/mL)	Female	10	5785 ± 200	10	7001 ± 227	10	6426 ± 203	FS-01: -17% FS-03: -10.0%	Yes; p <0.01 FS-02<FS-01	0.96	5264 to 8164
	Male	10	6382 ± 285	10	7042 ± 296	8	7333 ± 218	FS-01: -9.4% FS-03: -13.0%	No; p[2] = 0.052	0.63	5571 to 8772

Notes:

All comparisons included ten individuals from each site and sex unless otherwise noted.

Bold text denotes statistically significant differences between sites and percent differences that exceed critical effect size (CES)

Superscript 1 – 'n' denotes sample size of the respective experimental group

Superscript 2 – denotes that the associated p-value is based on a Fisher-Pitman permutation test because assumptions for the ANOVA test were not met.

The CES ranges presented in Table 6-8 are based on the pooled data from both reference sites in 2024 (mean ± 2* standard deviation as outlined in Section 5.2.1). One female (AEMP-FS-02-04) and two male (AEMP-FS-02-03 and AEMP-FS-02-18) slimy sculpin had CYP1A1 concentrations above the CES, but average CYP1A1 concentrations for both sexes were within the CES range (Table 6-8). Total protein measured in two female (AEMP-FS-02-04 and AEMP-FS-02-20) and two male (AEMP-FS-02-18 and AEMP-FS-02-24) slimy sculpin from the experimental site had protein concentrations below the CES range, while mean protein concentrations for both sexes remained within the CES range.

6.2.2 Tissue Residue Concentrations

Metal concentrations in slimy sculpin (on a dry weight basis) collected from Bosworth Creek in 2023 and 2024 are provided in Table 11 and summary statistics for each site are provided in Table 12.

The 2024 tissue residue concentrations in sculpin are compared among both reference sites and the experimental site for each KIP in Table 6-9. Sample means and distribution of observations for each KIP are compared with UCLs and the FEQG in Figure 6. The tissue concentrations measured in male slimy sculpin were similar among sites for all KIPs measured in 2024. Aluminum, arsenic, copper, and selenium were significantly lower in females from the new upstream reference site (AEMP-FS-03) compared with the existing reference site (AEMP-FS-01). Notably, arsenic was the only metal that also had significantly higher tissue concentrations at the experimental site when compared with the new reference site. Apart from arsenic, no metal KIP concentrations were significantly elevated at the experimental site compared with the two reference sites for either sex in 2024 (Table 6-9).

Tissue concentrations were also compared with control limits based on the CES of two standard deviations from the mean concentration measured in slimy sculpin from reference sites in 2024 (Table 6-10). Average concentrations measured in slimy sculpin from the experimental site for each KIP were within control limits in 2024. The copper concentration of two females from the experimental site were above the UCL in 2024. In addition, one molybdenum and one zinc concentration measured in female sculpin from the experimental site exceeded the UCL. In males, only one aluminum concentration measured at the experimental site exceeded the UCL in 2024. Wet weight tissue residue concentrations in slimy sculpin collected in 2024 are compared with the toxicological thresholds in Figure 7.

Selenium concentrations on a dry weight and wet weight basis in 2024 are compared with UCLs, the FEQG, and SETAC toxicological threshold in Figure 6-8. Two females from the experimental site in 2024 had selenium concentrations above the UCL, one of which exceeded the FEQG for selenium also. Four selenium concentrations (two male and two female) exceeded the SETAC threshold at the experimental site compared with two concentrations (two males) exceeding this threshold at the two reference sites. Fewer selenium concentrations above the FEQG were observed at the experimental site in 2024 (two concentrations exceeded FEQG) compared to 2023 (six concentrations exceeded FEQG) for both sexes (Table 11).

Based on the combined results from 2023 and 2024, female sculpin from both reference sites have had selenium concentrations consistently below the FEQG, while concentrations over the FEQG occur sporadically in female sculpin from the experimental site. Meanwhile, concentrations above the selenium FEQG have sporadically occurred in male sculpin from all sites.

Table 6-9: Statistical comparison results for key indicator parameters measured in slimy sculpin tissue during the 2024 AEMP

Parameter	Sex	AEMP-FS-02 (Exp. Site) Mean ± SE	AEMP-FS-01 (Ref. Site) Mean ± SE	AEMP-FS-03 (Ref. Site) Mean ± SE	% Detect	Trans[1]	Test Stat[2]	Sign. Diff.	Power (1-β)	CES Limits
Aluminum	Female	5.70 ± 0.79	7.55 ± 1.71	3.56 ± 0.69	100	Log10	4.532	Yes; p <0.05 FS-03<FS-01	0.77	<0.052 to 14.576
	Male[4]	8.62 ± 1.77	7.46 ± 2.24	4.31 ± 0.62	100	Log10	2.247	No; p = 0.13	0.46	<0.052 to 16.512
Arsenic	Female	0.25 ± 0.03	0.23 ± 0.04	0.13 ± 0.02	73	Log10	5.964	Yes; p <0.05 FS-03<FS-01 and FS-02	0.88	---
	Male	0.21 ± 0.02	0.25 ± 0.02	0.19 ± 0.02	67	None	3.787	No; p[3] = 0.15	---	---
Barium	Female	0.50 ± 0.07	0.56 ± 0.06	0.55 ± 0.12	100	None	0.125	No; p = 0.88	0.07	<0.001 to 1.148
	Male[4]	0.50 ± 0.06	0.56 ± 0.16	0.74 ± 0.21	100	---	1.335	No: p[3] = 0.55	---	<0.001 to 1.830
Cadmium	Female	---	---	---	13	---	---	---	---	---
	Male	---	---	---	20	---	---	---	---	---
Chromium	Female	0.82 ± 0.03	0.92 ± 0.05	0.84 ± 0.06	100	None	1.405	No; p = 0.26	0.30	0.53 to 1.23
	Male	0.84 ± 0.05	0.92 ± 0.09	0.85 ± 0.06	100	Log10	0.282	No; p = 0.76	0.09	0.39 to 1.37
Copper	Female	1.79 ± 0.13	1.84 ± 0.11	1.42 ± 0.09	100	None	4.207	Yes; p < 0.05 FS-03<FS-01	0.74	0.88 to 2.38
	Male	1.80 ± 0.13	1.77 ± 0.12	1.91 ± 0.16	100	None	0.278	No; p = 0.76	0.09	0.95 to 2.73
Molybdenum	Female	0.036 ± 0.010	0.035 ± 0.005	0.032 ± 0.006	97	Square root	0.125	No; p = 0.88	0.07	<0.001 to 0.070
	Male	0.050 ± 0.009	0.042 ± 0.009	0.044 ± 0.009	100	Log10	0.273	No; p = 0.76	0.09	<0.001 to 0.096
Nickel	Female	0.941 ± 0.120	1.175 ± 0.144	1.003 ± 0.214	100	None	0.544	No; p = 0.59	0.14	<0.029 to 2.228
	Male	0.996 ± 0.138	1.365 ± 0.295	1.309 ± 0.240	100	None	0.727	No; p = 0.49	0.17	<0.029 to 2.994
Selenium	Female	4.38 ± 0.43	4.50 ± 0.19	3.49 ± 0.19	100	None	3.554	Yes; p <0.05 FS-03<FS-01	0.66	2.42 to 5.57
	Male	4.46 ± 0.40	4.78 ± 0.28	4.82 ± 0.50	100	None	0.24	No; p = 0.79	0.09	2.32 to 7.28
Uranium	Female	---	---		36	---	---	---	---	---
	Male	0.0010 ± 0.0003	0.0015 ± 0.0005	0.0014 ± 0.0003	57	---	1.148	No: p[3] = 0.62	---	---
Zinc	Female	53.4 ± 6.91	55.9 ± 4.85	43.6 ± 4.65	100	Log10	1.893	No; p = 0.17	0.39	17.88 to 81.62
	Male	59.2 ± 3.08	61.6 ± 6.06	57.9 ± 5.27	100	None	0.143	No; p = 0.87	0.10	24.58 to 94.92

Notes:

All concentrations presented as mg/kg dry weight.

All comparisons included ten individuals from each site and sex unless otherwise noted.

Superscript 1 – 'Trans' denotes the data transformation applied to meet assumptions of the ANOVA statistical test.

Superscript 2 – Test statistic provided is dependent on the test applied. For ANOVA analyses the F-statistic is provided, while when a permutation test is applied the test statistic provided is the Z score.

Superscript 3 - denotes that the associated p-value is based on a permutation statistical analysis because data did not meet assumptions of the ANOVA and data transformation could not meet assumptions.

Table 6-10: Critical Effect Size (CES) Ranges for metal KIPs measured in slimy sculpin tissue during the 2024 AEMP

Parameter	Sex	Lower Limit	Upper Limit	AEMP-FS-02 (Mean)	AEMP-FS-02 (Range)	2024 Summary
Aluminum	Female	<0.052	14.576	5.70	2.1 to 11	Average within CES; no observations above CES
	Male	<0.052	16.512	8.62	1.7 to 22	Average within CES; 1 observation over CES
Arsenic	Female	Insufficient data above detection to compare experimental site conditions to reference sites				
	Male	Insufficient data above detection to compare experimental site conditions to reference sites				
Barium	Female	<0.001	1.148	0.50	0.27 to 0.85	Average within CES; no observations outside CES limits
	Male	<0.001	1.830	0.50	0.18 to 0.82	Average within CES; no observations outside CES limits
Cadmium	Female	Insufficient data above detection to compare experimental site conditions to reference sites				
	Male	Insufficient data above detection to compare experimental site conditions to reference sites				
Chromium	Female	0.53	1.23	0.82	0.69 to 1.00	Average within CES; no observations outside CES limits
	Male	0.39	1.37	0.84	0.62 to 1.00	Average within CES; no observations outside CES limits
Copper	Female	0.88	2.38	1.79	1.4 to 2.6	Average within CES; 2 observations over CES
	Male	0.95	2.73	1.80	1.1 to 2.4	Average within CES; no observations outside CES limits
Molybdenum	Female	<0.001[1]	0.070	0.036	<0.001 to 0.118	Average within CES; 1 observation over CES
	Male	<0.001[1]	0.096	0.050	0.024 to 0.095	Average within CES; no observations outside CES limits
Nickel	Female	<0.029[1]	2.228	0.941	0.474 to 1.7	Average within CES; no observations outside CES limits
	Male	<0.029[1]	2.994	0.996	0.379 to 1.7	Average within CES; no observations outside CES limits
Selenium	Female	2.42	5.57	4.38	2.70 to 6.70	Average within CES; 2 observations over CES
	Male	2.32	7.28	4.46	3.10 to 6.80	Average within CES; no observations outside CES limits
Uranium	Female	Insufficient data above detection to compare experimental site conditions to reference sites				
	Male	Insufficient data above detection to compare experimental site conditions to reference sites				
Zinc	Female	17.88	81.62	53.4	33 to 112	Average within CES; 1 observation over CES
	Male	24.58	94.92	59.2	44 to 76	Average within CES; no observations outside CES limits

Notes:

All concentrations presented as mg/kg dry weight.

Critical effect size (CES) limits are calculated from pooled upstream results from both reference sites in 2024.

Superscript 1 – indicates that the calculated lower control limit is below zero and limit is set to typical reportable detection limit for current reporting year.

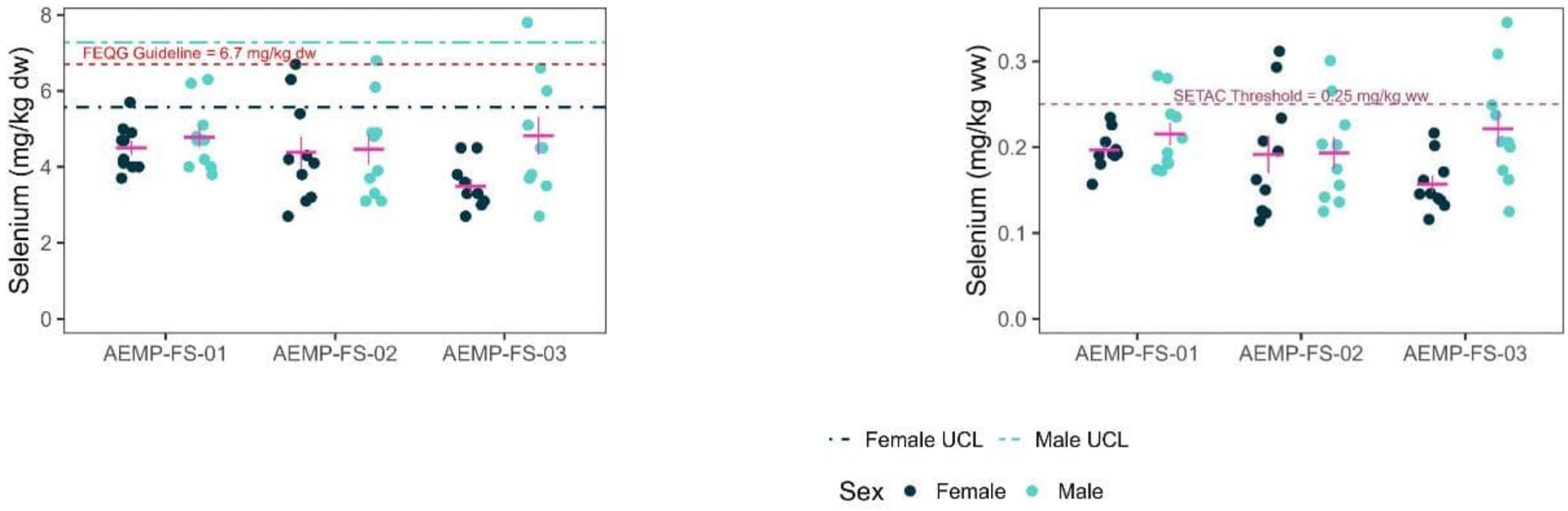

Figure 6-8: Selenium tissue residue concentrations on a dry weight (Left) and wet weight (Right) basis for slimy sculpin collected from Bosworth Creek in 2024

Threshold levels developed by SETAC to infer the potential for adverse health effects in fish were incorporated into the AEMP for the first time in 2024 (Section 5.2.3). These thresholds are based on wet weight tissue concentrations and use existing toxicological data to determine if a potential for adverse effects exists based on the tissue residue concentration measured. Wet weight tissue concentrations are presented in relation to SETAC thresholds for metal KIPs in Figure 7. Zinc was the only KIP apart from selenium with concentrations above the SETAC threshold in 2024, with one measurement from each site exceeding this concentration (Figure 7). Mercury is not a KIP in the AEMP, however, mercury is known to bioaccumulate in biological tissue and is often a concern for stakeholders and local consumers. Consequently, wet weight mercury concentrations are compared with the Health Canada ML and SETAC threshold in Figure 6-9 and concentrations measured in slimy sculpin from Bosworth Creek are well below these quality criteria.

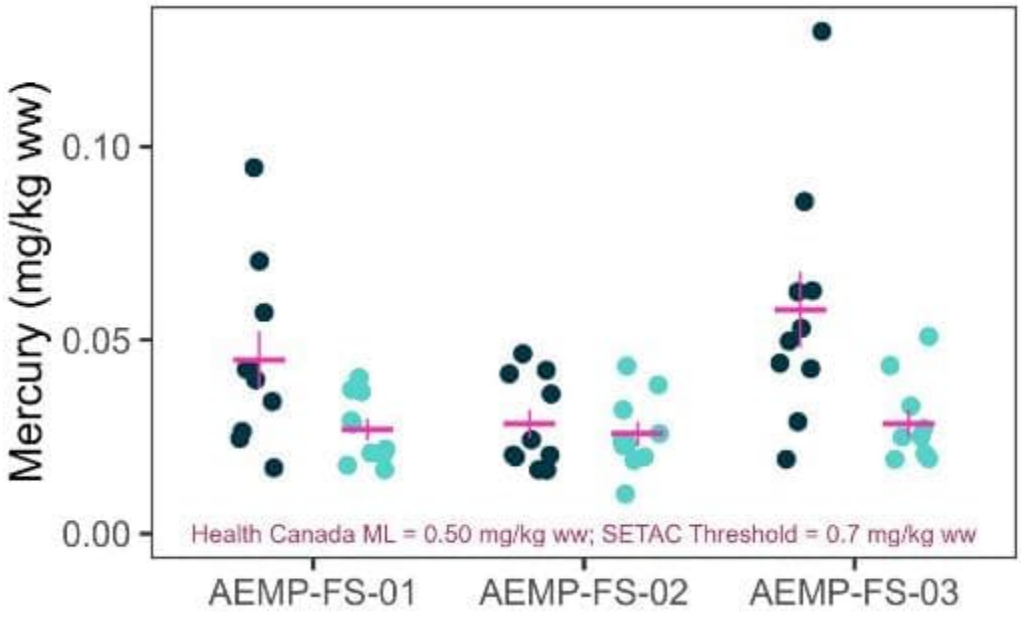

Figure 6-9: Wet weight mercury concentrations in slimy sculpin captured from Bosworth Creek in 2024. Horizontal pink line represents the mean concentration and vertical pink line represents the standard error.

6.2.2.1 Polycyclic Aromatic Hydrocarbons (PAHs) Tissue Residue

Parent PAH and aPAH tissue residue concentrations in slimy sculpin from Bosworth Creek in 2023 and 2024 are summarized in Tables 13 and 14, respectively. The total PAH concentrations in 2023 and 2024 are summarized in Table 6-11. Total PAH concentrations in 2024 were lower at both AEMP-FS-01 and AEMP-FS-02 compared with concentrations observed in 2023. Notably, the PAH concentration at the new AEMP-FS-03 sampling location was approximately half that measured at the other two sites, driven primarily by a lower concentration of aPAHs. Similar to 2023, alkylated PAHs made up most of the overall PAH concentrations in Bosworth Creek slimy sculpin in 2024 (Table 6-11). Results from 2024 reaffirm those observed in 2023, which indicate that PAH concentrations in Bosworth Creek slimy sculpin remain low.

Table 6-11: Total Parent and Alkylated PAH Concentrations in Bosworth Creek (2023 to 2024)

Site	Sampling Year	Parent PAHs (ng/g)	Alkylated PAHs (ng/g)	Total PAHs (ng/g)	PEQ (ng-BaP/g)
AEMP-FS-01	2023	3.1	31.9	35.0*	0.12
	2024	4.1	24.9	29.0	0.18
AEMP-FS-02	2023	4.4	40.7	45.1*	0.14
	2024	4.1	25.9	30.0	0.11
AEMP-FS-03	2023	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	2024	3.3	12.3	15.6	0.08

Notes: * Indicates that the total PAH concentrations reported in the 2023 AEMP summary report incorrectly summarized the concentration of alkylated PAHs and those reported in 2024 supersede previously reported concentrations.

Chrysene was the only carcinogenic PAH measured above the reportable detection limit in 2024, and concentrations above the detection limit were only measured at the new reference site (AEMP-FS-03) and the experimental site (AEMP-FS-02). Although more carcinogenic PAH concentrations were measured above the detection limit in 2023, most were also below detection in 2024. Consequently, the carcinogenicity of PAHs in Bosworth Creek slimy sculpin (measured as PEQ) is low in 2023 and 2024 (Table 6-11). In addition, the PEQs are heavily influenced by the sample-specific detection limits obtained in 2023 and 2024. There are currently no tissue residue guidelines for carcinogenic PAHs in wild fish, however, maximum levels for protection of human consumers established by Health Canada (3 ng-BaP/g; Health Canada 2020) and the European Commission (1 ng-BaP/g for protection of infants; Evans et al. 2019) are higher than PEQs measured in Bosworth Creek slimy sculpin.

The profile of PAHs/aPAHs measured in slimy sculpin from Bosworth Creek in 2024 and 2023 are presented in Figure 6-10 and Figure 6-11, respectively. Overall, the profile of PAHs present in fish tissue were similar to that observed in 2023, however, the concentrations of parent and alkylated dibenzothiophenes and fluorenes were lower in 2024. Parent and alkylated naphthalenes and phenanthrenes/anthracenes remained the most abundant PAHs in Bosworth Creek slimy sculpin.

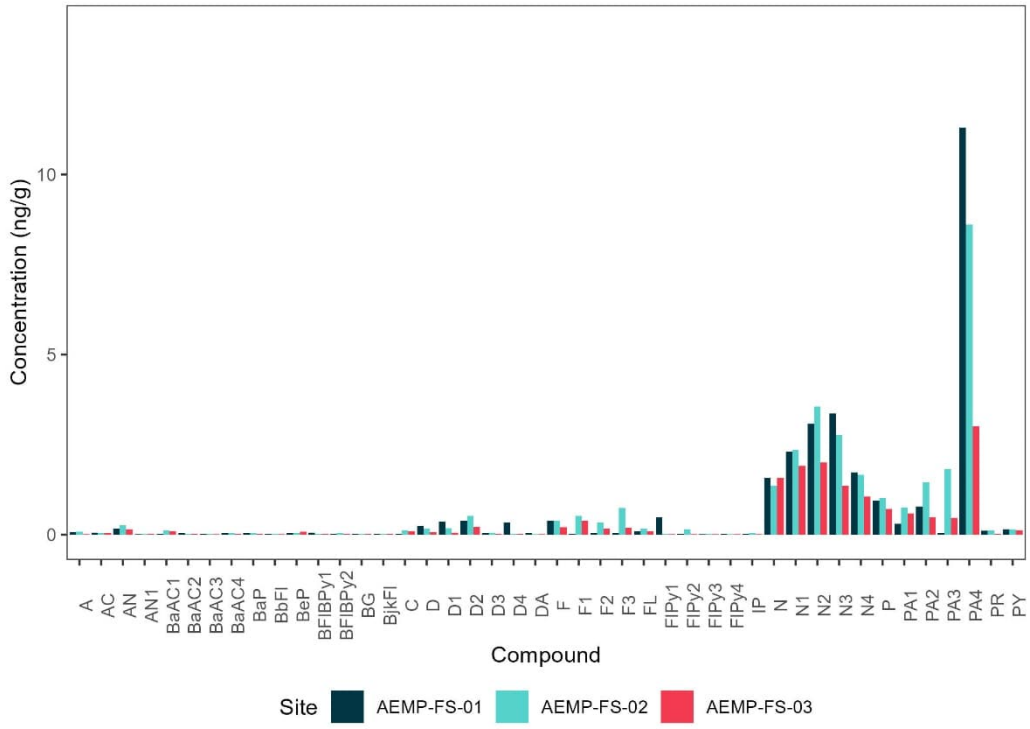

Figure 6-10: Polycyclic Aromatic Hydrocarbon (PAH) profiles of Slimy Sculpin from Bosworth Creek in 2024

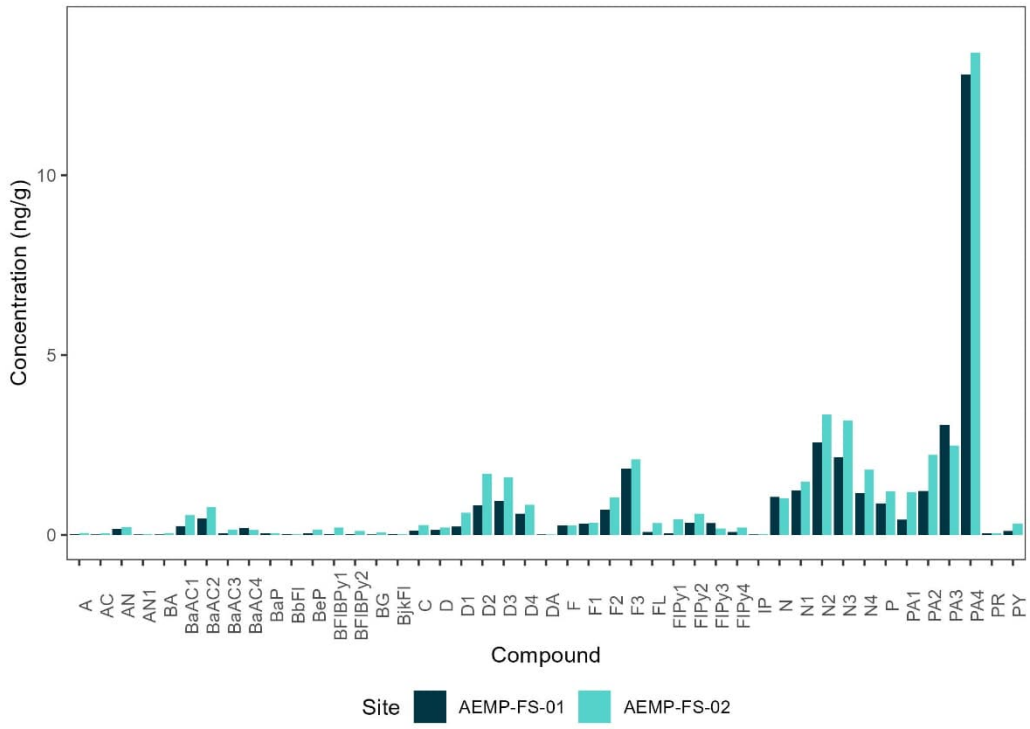

Figure 6-11: Polycyclic Aromatic Hydrocarbon (PAH) profiles of Slimy Sculpin from Bosworth Creek in 2023

7. Action Level Threshold Summary

The AEMP requires specified response criteria to provide context to annual results. These criteria are under development in the AEMP design document. The AEMP is only capable of adaptive monitoring (i.e. change to the monitoring program or data evaluation and presentation methods), it is not capable of identifying potential operational changes at NWO. Furthermore, trend analysis-based responses may not be possible until the dataset is further established.

7.1 2024 Surface Water Quality Monitoring

Scenarios requiring action within the water quality sampling program and analysis are presented in Table 7-1. Items 1 and 2 require assessment following collection of further data, no changes to the 2025 program, as planned, are required based on surface water results to date.

Table 7-1: Action Level Threshold Summary - Surface Water

Item	Scenario	Contingency Planning	Triggers in 2024 Program	Required Changes for 2025
1.	Detection of KIPs at concentrations above background, but below applied regulatory guidelines.	• Continue seasonal sampling as planned. • Evaluate whether the situation is stable, based statistical trend analysis. • If increasing statistical trends in primary KIP's are identified, consider additional parameter trend analysis (i.e. associated non-KIPs). • Implement flow-corrected control limit development to account for detections above background because of high flow and sediment load.	Parameters as summarized in Table 6-1. Note that the upstream control limits are an evolving dataset.	No program changes required at this time but several parameters exceeded their UCL in 2024 and require evaluation as upstream data is further established.
2.	Detection of primary KIPs at concentrations exceeding both background and applied regulatory guidelines.	• Continue seasonal sampling as planned. • Evaluate whether the situation is stable, based statistical trend analysis.	Parameters as discussed in Section 6.1.1 and Section 6.1.2. Note that the upstream control limits are an evolving dataset.	No program changes required at this time but several metals exceeded their UCL and guidelines at downstream locations in 2024 and require evaluation as upstream data is further established.

Item	Scenario	Contingency Planning	Triggers in 2024 Program	Required Changes for 2025
		• If increasing statistical trends in KIPs are identified, consider additional parameter trend analysis (i.e. associated non-KIPs) and plan for additional site characterization (more locations) within 3 years to laterally delineate the area, if feasible. • Implement flow-corrected control limit development to account for detections above background because of high flow and sediment load.		
3.	Increasing trends of KIPs or associated parameters above control limits are confirmed at downstream locations.	• Investigate potential sources of increasing trends, including regional water chemistry changes, site inputs. • Evaluate data in conjunction with other site programs (groundwater sampling and progression reclamation programs). • Attempt to determine source of changes.	• Chloride concentrations at AEMP-DS-01 (Lower Bosworth Creek), concentrations measured at upstream sites have similar magnitude as those measured at downstream site. • Magnesium and cadmium concentrations at AEMP-DS-06 (FGH Blue Fish). Minimum number of data points for trend analysis present and site conditions at AEMP-DS-06 may be influenced by inflow from the Ramparts River.	Increased upstream chloride characterization in Bosworth Creek and review groundwater data.

7.2 2024 Fish Health Monitoring

Low action level threshold exceedances and considerations for the 2025 AEMP are provided in Table 7-2. It is notable that none of the results from the 2024 SFS suggest an immediate risk to the slimy sculpin population in Bosworth Creek and no changes to the 2025 program are recommended.

Table 7-2: Action Level Threshold Summary – Fish Health

Item	Scenario	Contingency Planning	Triggers in 2024 Program	Required Changes for 2025
1.	Statistical difference between upstream reference and downstream experimental sampling location, but difference is below CES	• Continue tissue sampling as planned. • Evaluate whether the situation is stable, by checking if similar pattern is present in subsequent monitoring year	Female condition is similar among sites but male condition is increased at the downstream experimental location based on ANCOVA/ANOVA analyses.	Assess the similarity between sample years using repeated-measures ANOVA and pool across years where feasible to improve statistical power.
2.	Statistical difference between upstream reference and downstream experimental sampling location. Results partially exceed CES given that average is within CES and few observations occur outside the CES range.	• Continue tissue sampling as planned. • Evaluate whether the situation is stable, by checking if similar pattern is present in subsequent monitoring year	CYP1A1 protein content is significantly higher while total protein is significantly lower in livers from the downstream experimental location	None
3.	Statistical difference between upstream reference(s) and downstream experimental sampling location. Percent difference between sites exceeds the CES for HSI for males only.	• Continue tissue sampling as planned. • Evaluate whether the situation is stable, by checking if similar pattern is present in subsequent monitoring year	Liver size relative to body weight is higher in males from the downstream experimental location.	Assess the similarity between sample years using repeated-measures ANOVA and pool across years where feasible to improve statistical power.

8. Conclusions

8.1 Surface Water

Surface water quality results have been analyzed using different methods to detect change in water quality downstream from the NWO in the Mackenzie River and Bosworth Creek. Analysis using multiple methods is intended to improve change detection capability and results from each method are used to interpret results of the others. As such, an aggregate understanding of water quality is obtained. Findings per method are as follows:

- Comparison to published guidelines
  - Several metals exceed the published guidelines which is consistent with historical data. In all cases, exceedances are observed at upstream locations as well as downstream locations suggesting results represent naturally occurring concentrations.
  - There is no indication of water quality concerns based on comparison to guidelines.
- Control charting
  - Several parameters exceeded their individual upper control limits at downstream locations in 2024. The data shows an increase in UCL exceedances over data collected in 2023. The upstream data set remains limited and upstream water quality may show natural variation with the historically low water levels observed in 2023 and 2024.
  - UCL exceedances may be an artefact of early stages of upstream dataset definition but should be observed over time for consistency in parameters.
  - Chloride at AEMP-DS-01 (Lower Bosworth Creek) should continue to be monitored as the UCL exceedances coincide with a statistically significant increasing trend. Currently, chloride concentrations at the downstream location are consistent with recent data at newly established upstream locations so this may be a result of natural changes but should be evaluated as further data is collected.
- Piper plots – evaluation of hydrochemical type
  - Water in both water courses shows consistent major ion chemistry between upstream and downstream locations with exception of AEMP-DS-06 (FGH Bluefish) which is influenced by tributary water from the Ramparts River. Near facility downstream locations are consistent with upstream locations which support the hypothesis that water chemistry at AEMP-DS-06 is affected by non-facility related influences.
  - There is no indication of water quality concerns based on comparison of upstream and downstream major ion chemistry.
- Trend analysis
  - Statistically significant increasing trends of magnesium and cadmium are observed at AEMP-DS-06. Similar trends for these parameters are not observed at near-facility downstream locations suggesting these are not site related.
  - A statistically significant increasing trend of chloride is observed at AEMP-DS-01 (Lower Bosworth Creek). Chloride concentrations are currently consistent with those at newly established upstream locations suggesting that the increase may be related to naturally occurring changes but should be evaluated as further data is collected.

- SPMD PAH data
  - Total PAH concentrations at locations AEMP-DS-02 (Refinery Bank and AEMP-DS-04 (Marine Dock) are higher than at other locations in the Mackenzie River. Individual concentrations remain below guidelines where available and generally between 1 x 10^{-6} mg/L and 1 x 10^{-8} mg/L. These locations are areas with known natural seeps and hydrocarbon sheen is frequently observed on the water. The highest individual concentration was phenanthrene at AEMP-DS-02 but is an order of magnitude below guideline.
  - The pyrogenic index analysis indicated PAHs and aPAHs are primarily petrogenic in origin, but concentrations are currently attributed to natural seeps.
  - Overall comparison of upstream and downstream locations showed consistent concentrations away from the two dock sample points.

Overall, there is no indication of water quality concerns in either Mackenzie River or Bosworth Creek however, chloride concentrations in Bosworth Creek downstream of the facility are increasing and exceed the current UCL. Concentrations are below guidelines and consistent with those at newly established upstream locations but will require further evaluation as data is collected. Quantification of natural seep PAH chemistry, in areas upstream of the facility, may be warranted to further evaluate concentrations detected at the Refinery and Mainland docks if concentrations reach freshwater aquatic life guideline thresholds or show significant increase over time.

8.2 Fish Health in Bosworth Creek

The SFS during the 2024 AEMP continued to characterize fish health metrics providing information on energy allocation and availability, as well as overall fish condition. In addition, hepatic CYP1A1 protein content and PAH/metal tissue residues were measured. A key change in 2024 involved the incorporation of a second upstream reference site (AEMP-FS-03) that was established based on stakeholder feedback. This site was first sampled in 2024 and improves the reliability of AEMP by providing additional reference data for comparison with conditions in Bosworth Creek downstream from the CPF.

The following provides a summary of the key findings of the SFS during the 2023 AEMP and how results in 2024 support or oppose conclusions from previous monitoring:

- In 2023, condition of female slimy sculpin was higher at the downstream sampling location (AEMP-FS-02) based on condition factor and weight-length relationship analysis. Percent differences between sites are below the low action level threshold and suggest higher condition at the experimental location.

- In 2024, condition of male slimy sculpin was higher at the downstream sampling location (AEMP-FS-02) compared with both reference sites based on condition factor. Site comparisons based on length-weight relationships indicate that male sculpin from AEMP-FS-02 are statistically heavier for a given length than the new upstream reference (AEMP-FS-03). Percent differences for both sexes are below the CES and suggest higher condition (e.g. more energy available) at the experimental location, therefore no immediate actions are required at this time. These results partially verify results from 2023 given that fish condition was higher at the experimental location, however, the observed site differences may not be sex-dependent based on the 2024 AEMP.

- In 2023, Gonad weight is reduced in younger (smaller) slimy sculpin from AEMP-FS-02 but a higher growth rate results in higher gonad weight in older (longer) fish. Percent difference for longer individuals exceeds the CES but indicates that gonad weight is higher at the downstream experimental location.
    - In 2024, Gonad weight relative to body size was similar among sites and no interaction was observed between gonad weight and sampling location. Statistical power is currently limited given a relatively small site effect, therefore methods to improve statistical power (e.g. pooling multiple years of gonad and body weight data) should be investigated to improve statistical power.
- In 2023, the hepatic CYP1A1 protein concentration and liver size relative to body weight was higher in males from AEMP-FS-02 compared with those from AEMP-FS-01. The HSI percent difference exceeded the CES suggesting more resources are being shunted to the liver at the downstream site in males.
    - In 2024, the HSI was higher at the experimental location compared with reference locations and the HSI percent differences exceeded the CES. Notably, the percent difference among sites based on the liver-body weight relationship were below the CES. Results from 2024 confirm the findings from the 2023 AEMP that male slimy sculpin at the experimental location have larger liver size relative to body weight. No immediate action is recommended at this time given that the more robust analysis of the liver-body weight relationship indicates percent differences below the CES, in conjunction with higher condition factor (i.e. suggestive of a nutrient enriched environment).
- In 2023, there were no statistical differences between sampling locations for any tissue residue KIPs. Tissue residue concentrations were influenced by sex, with males having higher tissue concentrations of several KIP metals.
    - In 2024, the metal concentrations in male sculpin remained higher than in female counterparts, verifying that male sculpin tend to have higher metal concentrations in tissue. Some KIP tissue concentrations were significantly lower at the new reference site compared with the existing reference site including, aluminum, arsenic, copper and selenium. Most of these site differences are between only the two reference locations and the experimental location remains similar to the previously existing reference location, therefore no immediate action is necessary.
- In 2024, hepatic CYP1A1 protein concentration is significantly higher in male sculpin from the experimental location compared with the previously existing reference location. Alternatively, the total protein concentrations in female sculpin from the experimental location were lower than those measured from the previously existing reference location.

- Total PAH tissue concentrations in Bosworth Creek slimy sculpin are lower at the new reference sampling location compared with the other two sites, but lower concentrations were measured existing sites in 2024 compared to 2023. The PAH concentrations overall are low and potentially carcinogenic PAH concentrations are primarily below detection leading to low PEQs in both 2023 and 2024.

Overall, the SFS suggests there are no immediate risks to the health of small-bodied fish in Bosworth Creek given that fish condition is higher at the experimental site and catch rates suggest a high abundance compared with the reference locations. Results in 2023 and 2024 suggest that more energy may be allocated to the liver and contaminant detoxification at the experimental location. Despite this additional energy allocation to the liver, slimy sculpin at this site do not allocate less resources to gonad development and have higher energy availability based on fish condition.

9. Closure

We trust that this report satisfies your current requirements and provides suitable documentation for your records. If you have any questions or require further details, please contact the undersigned at any time.

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Tables

Table 1

Surface Water Analytical Results: Field-Measured Parameters

PROJECT No.: 417085-49223

Sampling Location	Date (dd-mmm-yyyy)	Dissolved Oxygen (mg/L)	Electrical Conductivity (uS/cm)	pH (pH Units)	Temperature (°C)	Turbidity (NTU)
CCME CEQG Freshwater Aquatic Life [#1]		**>6.5**	**---**	**(6.5 - 9)**	**---**	**---**
NW AEMP V5						
MACKENZIE RIVER						
AEMP-DS-02 (Marine Dock)	10-Jun-2020	12.95	162	8.31	8.7	126
	24-Jul-2020	---	227	**6.0** [#1]	15.5	---
	18-Sep-2020	12.61	168	8.17	9.0	23.9
	06-Jun-2021	7.82	315.3	7.03	12.0	94.8
	17-Sep-2021	---	259	7.96	10.0	24.5
	12-Jun-2022	12.25	225.8	8.2	8.4	148.8
	06-Aug-2022	9.38	220.2	7.38	16	243.1
	25-Sep-2022	10.9	186	8.13	8.7	---
	26-Jul-23	8.86	318.62	8.27	19.58	27.34
	18-Aug-23	---	---	---	---	---
	24-Sep-23	12.55	158.2	8.06	4.87	201.7
	18-Mar-24	---	---	---	---	---
	20-Jul-24	---	413.7	8.01	19.7	134.5
	16-Aug-24	12.12	437	8.27	17.38	103.2
	13-Sep-24	10.79	317.5	8.34	12.4	6.7
AEMP-DS-03 (Island 3)	12-Jun-2020	12.84	179	8.37	9.7	259
	28-Jul-2020	10.83	273.1	8.11	16.3	212
	22-Sep-2020	10.88	219.7	8.22	9.6	81.0
	07-Jun-2021	9.20	204.9	8.10	11.0	67.5
	18-Sep-2021	---	304	8.30	10.6	56.4
	14-Jun-2022	10.96	228	8.07	9.7	231
	06-Aug-2022	8.62	232.5	7.41	18	50.05
	25-Sep-2022	9.8	227	8.2	10.9	---
	25-Jul-23	8.42	336.47	8.02	21.05	29.05
	19-Aug-23	---	---	---	---	---
	25-Sep-23	---	---	---	---	---
	18-Mar-24	---	---	---	---	---
	19-Jul-24	---	397.3	8.04	20.5	338.8
	15-Aug-24	9.94	321	8.27	19.12	25.35
	17-Sep-24	10.22	263.7	8.41	12.7	21.36
AEMP-DS-04 (Refinery)	10-Jun-2020	12.27	157	8.36	8.2	166
	24-Jul-2020	---	227	**6.0** [#1]	15.0	---
	18-Sep-2020	13.27	166	8.15	9.0	367
	06-Jun-2021	8.06	335.1	6.90	10.7	99.9
	17-Sep-2021	---	249	8.00	9.1	26.9
	12-Jun-2022	11.87	192	8.18	8.6	220.7
	06-Aug-2022	9.12	206.6	7.45	16.5	461
	24-Sep-2022	10.8	180	8.11	8.2	---
	26-Jul-23	8.66	305.19	8.23	19.6	23.5
	18-Aug-23	---	---	---	---	---
	24-Sep-23	12.03	141.65	7.76	5.14	452
	18-Mar-24	---	---	---	---	---
	20-Jul-24	8.66	284.6	7.99	19.59	135.3
	16-Aug-24	11.87	300	8.25	17.39	135.3
	13-Sep-24	10.07	220	8.32	12.7	6.45
AEMP-DS-05 (Radar)	12-Jun-2020	12.70	169	8.41	9.11	308
	28-Jul-2020	11.05	258.4	8.10	16.2	83.3
	22-Sep-2020	11.06	203	7.94	9.4	63.7
	07-Jun-2021	9.47	228.3	8.12	10.8	146
	18-Sep-2021	---	286	8.24	10.3	42.9
	10-Aug-2022	9.3	204.1	7.33	16.1	---
	25-Jul-23	8.62	311.5	8.02	20.4	21.22
	19-Aug-23	---	---	---	---	---
	26-Sep-23	---	---	---	---	---
	18-Mar-24	---	---	---	---	---
	19-Jul-24	10.25	406.2	8.29	18.8	366.1
	15-Aug-24	11.8	326	8.17	19.77	41.68
	17-Sep-24	10.05	302	8.26	11.9	15.54
AEMP-DS-06 (Fort Good Hope)	10-Mar-2023	---	---	---	---	---
	24-Jul-2023	8.62	318.85	8.17	18.19	23.2
	21-Aug-2023	---	---	---	---	---
	03-Oct-2023	11.7	240.68	8.17	6.94	n/m
	15-Mar-24	15.5	330.6	6.08	0.4	48.18
	17-Jul-24	---	411.8	8.28	20.4	180.7
	14-Aug-24		395	7.58	17.76	40.5
	18-Sep-24	10.22	417.8	7.87	10.5	38.4
AEMP-DS-07 (Downstream Bluefish)	17-Jul-24	---	336.7	8.36	20	169.1
	14-Aug-24	11.39	326	7.69	18.56	135.2
	18-Sep-24	10.57	226.2	7.94	12.1	13.35
AEMP-DS-08 (Radar Island Southside)	19-Jul-24	---	430.7	8.17	19.4	269.8
	15-Aug-24	12.12	310	8.27	19.21	34.7
	17-Sep-24	10.59	294.9	8.3	11.6	14.66
AEMP-DS-09 (Goose Island)	19-Jul-24	10.43	4.3	8.02	20.1	220.9
	15-Aug-24	11.4	367	8.05	19.36	32.11
	17-Sep-24	10.25	263	8.44	12.3	13.14

Table 1

Surface Water Analytical Results: Field-Measured Parameters

PROJECT No.: 417085-49223

Sampling Location	Date (dd-mmm-yyyy)	Dissolved Oxygen (mg/L)	Electrical Conductivity (uS/cm)	pH (pH Units)	Temperature (°C)	Turbidity (NTU)
CCME CEQG Freshwater Aquatic Life [#1]		**>6.5**	**---**	**(6.5 - 9)**	**---**	**---**
AEMP-US-01 (Midway)	12-Mar-2023	---	---	---	---	---
	25-Jul-23	8.83	291.64	8.09	18.49	20.96
	19-Aug-23	---	---	---	---	---
	26-Sep-23	---	---	---	---	---
	16-Mar-24	18.03	167.9	7.87	0.4	4.05
	19-Jul-24	---	361.8	7.87	21.3	410.6
	15-Aug-24	11.92	293	8.34	20.21	21.09
	17-Sep-24	12.19	203.5	8.57	11.5	14.99
AEMP-US-02 (10 mile)	12-Jun-2020	12.68	169.8	8.30	9.2	277
	28-Jul-2020	10.78	262.2	8.14	16.4	99.5
	22-Sep-2020	10.99	213.0	8.29	9.6	62.8
	07-Jun-2021	9.53	231.7	8.11	11.0	82.8
	18-Sep-2021	---	294	8.16	10.9	51.0
	10-Aug-22	9.28	207.9	7.49	16.4	---
	25-Jul-23	9.09	333.93	8.17	19.89	14.99
	19-Aug-23	---	---	---	---	---
	26-Sep-23	---	---	---	---	---
	17-Mar-24	---	---	---	---	---
	19-Jul-24	---	376.9	8.02	20.9	290.1
	15-Aug-24	11.19	312	8.35	20.61	31.42
	17-Sep-24	11.57	209.8	8.56	12	7.32
AEMP-US-03 (6 Mile)	17-Mar-24	---	---	---	---	---
	19-Jul-24	10.53	366.4	7.95	20.1	282.7
	16-Aug-24	12.33	306	8.25	16.5	138
	12-Sep-24	11.36	207.9	8.61	12.5	7.53
BOSWORTH CREEK						
AEMP-DS-01 (Lower Bosworth Creek)	10-Jun-2020	10.87	446.1	**9.57** [#1]	11.7	2.89
	24-Jul-2020	---	557	7.0	16.0	---
	18-Sep-2020	12.18	444	8.35	7.1	0
	06-Jun-2021	7.45	648.8	7.47	8.8	2.68
	19-Sep-2021	---	705	8.27	6.3	1.66
	11-Jun-2022	---	347.5	7.98	11.3	2.44
	06-Aug-2022	9.02	536	8.23	16.3	95.8
	26-Sep-2022	10	435	8.25	3.8	---
	26-Jul-23	8.92	877.16	8.29	17.97	3.24
	18-Aug-23	---	---	---	---	---
	25-Sep-23	13.56	337.14	8.08	1.43	3.94
	18-Jul-24	---	724	8.52	17.1	2.69
	15-Aug-24	12.22	835	8.27	16.05	1.47
	13-Sep-24	11.36	552	8.41	9.2	1.62
AEMP-US-04 (Upper Bosworth Creek)	26-Jul-23	8.86	785.89	8.27	17.26	2.29
	24-Sep-23	13.37	398.93	8.35	1.59	14.46
	18-Jul-24	---	762	8.45	19.1	1.56
	16-Aug-24	11.62	725	8.28	17.86	0.84
	13-Sep-24	11.43	563	8.48	10.1	1.34
AEMP-US-05 (Uptream of Winter Road)	18-Jul-24	9.8	858	8.32	17.9	1.94
	16-Aug-24	12.26	814	8.35	16.86	0.59
	12-Sep-24	11.56	571	8.53	10.9	1.82

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1] denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Fresh
   http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)

Dissolved Oxygen:
Warm Water Biota:
Early life stages = 6 mg/L
Other life stages = 5.5 mg/L
Cold Water Biota:
Early life stages = 9.5 mg/L
Other life stages = 6.5 mg/L

Table 2

Surface Water Analytical Results: Indicator Analysis Parameters

PROJECT No.: 417085-54419

			Anions					Cations							General											Inorganic Nitrogen Compounds							Inorganic Sulphur Compounds	Ion Balance	Miscellaneous			
Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Fluoride (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Colour (color unit)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	pH (pH Units)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Ammonia (Total; as N) (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Sulphide (asH2S) (mg/L)	Ion Balance % Difference (%)	Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	120	---	---	---	0.3	---	---	---	---	0.12	---	---	---	---	---	(6.5 - 9)	---	---	---	8.5	---	2.9	---	0.06	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			---	---	---	---	---	None required	---	---	0.12	---	---	1.5	---	---	---	---	---	---	---	---	1	None required	45	10	3	1	---	---	---	---	---	---	---	---
NW AEMP V5																																					
MACKENZIE RIVER																																					
Mackenzie Upstream Data UCL			---	---	14.5	57	---	42	5.233	12.7	---	---	---	---	---	---	---	---	---	---	225	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mackenzie Upstream Data LCL			---	---	4.3	23	---	23	<0.060	7.0	---	---	---	---	---	---	---	---	---	---	106	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
DOWNSTREAM																																					
AEMP-DS-02 (Marine Dock)	17-Aug-2017	Grab	120	< 0.50	7.1	54	< 0.50	40	< 0.060	12	< 0.0040	0.93	7.8	---	96	< 0.50	---	310	150	---	180	33	---	---	0.18	0.040	< 0.033	< 0.010	0.040	---	< 0.0020	0.87	< 2.0	---	4.8	4.1
	21-Aug-2017	Grab	110	< 0.50	9.4	42	< 0.50	31	< 0.060	9.9	< 0.0040	0.83	8.4	---	88	< 0.50	---	280	120	---	160	31	---	---	0.25	0.057	< 0.033	< 0.010	0.057	---	---	2.8	< 2.0	---	3.7	3.6
	16-Sep-2017	Grab	110	< 0.50	10	38	< 0.50	33	< 0.060	10	0.0041	0.83	8.8	---	86	< 0.50	---	270	130	---	150	110	---	---	0.30	0.068	< 0.033	< 0.010	0.068	---	0.0080	2.2	< 2.0 [#4]	---	4.7	4.0
	16-Oct-2017	Grab	100	< 0.50	9.9	44	< 0.50	30	< 0.060	10	0.0049	0.89	8.8	---	82	< 0.50	---	270	120	---	130	29	---	---	0.38	0.086	< 0.033	< 0.010	0.086	---	< 0.0020	1.7	< 2.0	---	3.0	3.6
	23-Jun-2018	Grab	97	< 1.0	8.9	36	< 1.0	26	0.20	8.1	0.011	0.72	6.3	---	79	< 1.0	---	250	99	---	140	51	33 [#2]	0.037	0.23	0.052	< 0.033	< 0.010	0.052	0.27	< 0.0020	6.6	---	33	5.5	4.9
	13-Aug-2018	Grab	110	< 1.0	11	45	< 1.0	33	< 0.060	11	< 0.0040	0.83	10	---	90	< 1.0	---	290	130	---	200	29	---	0.018	0.17	0.037	< 0.033	< 0.010	0.037	0.28	0.0030	0.80	---	25	4.8	4.8
	15-Aug-2018	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.17	0.038	< 0.033	< 0.010	0.038	---	---	---	< 2.0	---	---	---
	17-Oct-2018	Grab	100	< 1.0	11	40	< 1.0	31	< 0.060	11	< 0.0040	0.92	9.4	---	85	< 1.0	---	270	120	---	160	5.3	2.2 [#2]	< 0.015	0.41	0.093	< 0.033	< 0.010	0.093	0.12	< 0.0020	0.39	---	7.2	3.0	2.8
	18-Oct-2018	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.4 [#8]	---	---	---
	03-Jun-2019	Grab	110	< 1.0	8.7	39	< 1.0	31	< 0.060	10	0.0048	0.82	7.4	---	87	< 1.0	17	280	120	8.07	190	130	97 [#2]	< 0.015	0.54	0.12	< 0.033	< 0.010	0.12	0.38	0.0070	1.9	< 2.0	52	6.7	5.1
	28-Aug-2019	Grab	110	< 1.0	9.4	47	< 1.0	34	< 0.060	11	< 0.0040	0.84	8.5	---	94	< 1.0	14	300	130	8.17	180	22	17 [#2]	0.026	0.31	0.069	< 0.033	< 0.010	0.069	0.23	0.0020	1.7	< 2.0	< 10	4.7	3.6
	02-Oct-2019	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 2.0	---	---	---
	03-Oct-2019	Grab	110	< 1.0	10	43	< 1.0	32	< 0.060	11	< 0.0040	0.81	8.5	---	89	< 1.0	8.9	290	120	---	150	18	20 [#2]	0.015	0.34	0.077	< 0.033	< 0.010	0.077	0.19	0.0030	1.8	---	26	3.6	3.5
	10-Jun-2020	Grab	69	< 1.0	5.9	24	< 1.0	26	< 0.060	7.4	< 0.0040	0.73	5.9	---	57	< 1.0	15	180	96	6.76	130	220 [#9]	100 [#2]	< 0.015	0.25	0.057	< 0.033	< 0.010	0.057	0.62	< 0.0020	9.5	< 2.0	52	6.1	6.2 [#10]
	24-Jul-2020	Grab	95	< 1.0	7.3	36	< 1.0	29	< 0.060	8.9	< 0.0040	0.77	6.9	---	78	< 1.0	19	260	110	8.03	150	74	39 [#2]	< 0.015	0.22	0.051	< 0.033	< 0.010	0.051	0.40	< 0.010	0.25	< 2.0	14	5.1	4.4
	18-Sep-2020	Grab	100	< 1.0	7.7	36	< 1.0	32	< 0.060	8.8	< 0.0040	0.54	6.9	---	82	< 1.0	15	260	120	7.91	160	25	17 [#2]	< 0.015	0.24	0.055	< 0.033	< 0.010	0.055	0.26	0.013	0.44	< 2.0	12	4.9	4.8
	06-Jun-2021	Grab	120	< 1.0	6.1	30	< 1.0	29	0.066	8.4	< 0.0040	1.0	6.7	0.094	100	< 1.0	29	240	110	---	210	110	83 [#2]	< 0.015	0.36	0.082	< 0.033	< 0.010	0.082	0.52	0.026	6.3	< 2.0 [#4]	19	7.5	7.3
	18-Aug-2021	Grab	110	< 1.0	7.9	41	< 1.0	33	< 0.060	10	< 0.0040	0.93	7.8	0.11	90	< 1.0	18	270	120	---	210	230 [#9]	200 [#2]	0.018	0.23	0.051	< 0.033	< 0.010	0.051	0.29	0.027	0.61	< 2.0	57	6.3	5.2
	17-Sep-2021	Grab	110	< 1.0	8.7	41	< 1.0	35	< 0.060	11	< 0.0040	0.95	8.2	0.090	92	< 1.0	14	270	130	8.07	180	19	18 [#2]	< 0.015	0.32	0.073	< 0.033	< 0.010	0.073	0.20	< 0.0020	1.0	< 2.0 [#3]	16	5.4	5.4
	31-Mar-2022	Grab	---	---	---	---	---	25	< 0.060	9.1	< 0.0040	0.93	8.3	---	---	---	4.5	---	---	7.94	120	< 1.0	2.0 [#2]	< 0.015	0.83	0.19	< 0.033	< 0.010	0.19	0.19	< 0.0020	---	< 2.0 [#3]	< 10	3.6	3.2
	12-Jun-2022	Grab	96	< 1.0	3.9	32	< 1.0	29	0.064	8.0	< 0.0040	1.1	5.1	0.085	79	< 1.0	37	220	110	7.52	150	270 [#9]	97 [#2,11]	< 0.015	0.26	0.058	< 0.033	< 0.010	0.058	0.35	0.012	0.16	< 2.0	57	6.7	5.9
	06-Aug-2022	Grab	110	< 1.0	8.9	40	< 1.0	32	0.34 [#1]	9.5	0.030	0.95	7.9	0.085	87	< 1.0	11	270	120	7.76	180	160	80 [#2,11]	< 0.015	0.23	0.052	< 0.033	< 0.010	0.052	0.31	0.026	1.4	< 2.0	21	4.9	4.7
	25-Sep-2022	Grab	120	< 1.0	10	36	< 1.0	30	< 0.060	9.3	< 0.0040	0.88	7.9	0.10	96	< 1.0	6.0	260	110	6.90	170	34	15 [#2]	< 0.015	0.26	0.059	< 0.033	< 0.010	0.059	0.19	< 0.0020	6.2	< 2.0	19	3.6	3.5
	09-Mar-2023	Grab	95	< 1.0	11	29	< 1.0	27	< 0.060	9.7	< 0.0040	0.89	9.3	---	78	< 1.0	---	230	110	---	120	---	---	< 0.015	0.82	0.19	< 0.033	< 0.010	0.19	0.16	< 0.0020	2.1	---	---	2.1	2.1
	25-Jul-2023	Grab	120	< 1.0	10	43	< 1.0	35	< 0.060	9.9	< 0.0040	0.88	9.0	---	100	< 1.0	3.3	290	130	7.35	96	13	10 [#2]	< 0.015	0.18	0.040	< 0.033	< 0.010	0.040	0.11	< 0.0020	3.6	---	< 10 [#6]	3.6	3.1
	18-Aug-2023	Grab	120	< 1.0	10	45	< 1.0	33	< 0.060	10	< 0.0040	0.85	8.1	---	97	< 1.0	7.9	280	120	---	180	52	53 [#2]	< 0.015	0.32	0.073	< 0.033	< 0.010	0.073	0.16	< 0.0020	5.8	---	20	3.2	3.1
	24-Sep-2023	Grab	110	< 1.0	12	46	< 1.0	34	< 0.060	11	< 0.0040	0.95	10	---	90	< 1.0	9.6	290	130	---	130	6.1	7.4 [#2]	< 0.015	0.25	0.056	< 0.033	< 0.010	0.056	0.12	< 0.0020	0.45	---	22	2.7	2.4
	18-Mar-2024	Grab	110	< 1.0	14	35	< 1.0	30	< 0.060	10	< 0.0040	1.1	10	---	86	< 1.0	< 2.0	270	120	8.01	160	< 1.0	2.1 [#2]	< 0.015	0.95	0.21	< 0.033	< 0.010	0.21	0.11	< 0.0020	0.83	---	< 10 [#12]	3.4	2.6
	20-Jul-2024	Grab	120	< 1.0	10	57	< 1.0	36	< 0.060	11	< 0.0040	0.89	8.5	---	96	< 1.0	5.8	330	130	7.95	180	110	120 [#2]	< 0.015	0.40	0.089	< 0.033	< 0.010	0.089	< 0.20	0.021	5.6	---	12	3.2	3.0
(Duplicate)	20-Jul-2024	Grab	130	< 1.0	9.8	56	< 1.0	36	< 0.060	11	< 0.0040	0.96	8.6	---	100	< 1.0	5.4	320	130	7.34	190	100	110 [#2]	< 0.015	0.37	0.083	< 0.033	< 0.010	0.083	< 0.20	0.020	6.6	---	28	3.3	2.9
	16-Aug-2024	Grab	150	< 1.0	15	73	< 1.0	49	< 0.060	17	0.040	1.0	15	---	120	< 1.0	6.4	400	190	7.92	240	460 [#9]	150 [#2]	0.016	0.19	0.043	< 0.033	< 0.010	0.043	0.23	0.020	1.6	---	31	3.0	2.7
(Duplicate)	16-Aug-2024	Grab	140	< 1.0	16	73	< 1.0	48	< 0.060	16	0.039	1.0	15	---	120	< 1.0	8.6	420	190	8.14	250	450 [#9]	150 [#2]	< 0.015	0.25	0.056	< 0.033	< 0.010	0.056	0.37	0.018	1.3	---	37	2.8	3.1
	13-Sep-2024	Grab	120	< 1.0	10	51	< 1.0	35	< 0.060	12	< 0.0040	0.91	9.6	---	95	< 1.0	13	310	140	7.09	180	1.0	3.2 [#2]	< 0.015	0.22	0.049	< 0.033	< 0.010	0.049	< 0.20	< 0.0020	1.2	---	11	3.0	2.7
AEMP-DS-03 (Island 3)	16-Sep-2017	Grab	120	< 0.50	9.4	48	< 0.50	42	< 0.060	11	< 0.0040	0.94	9.0	---	99	< 0.50	---	320	150	---	160	22	---	---	0.17	0.038	< 0.033	< 0.010	0.038	---	< 0.0020	2.5	< 2.0 [#4]	---	4.3	3.5
	16-Oct-2017	Grab	120	< 1.0	10	47	< 1.0	37	< 0.060	11	< 0.0040	0.94	9.3	---	97	< 1.0	---	310	140	---	170	8.0	---	---	0.20	0.046	< 0.033	< 0.010	0.046	---	0.0020	0.42	< 2.0	---	3.6	4.2
	23-Jun-2018	Grab	100	< 1.0	6.3	44	< 1.0	33	< 0.060	9.5	< 0.0040	0.82	6.1	---	82	< 1.0	---	260	120	---	160	71	60 [#2]	0.024	0.16	0.035	< 0.033	< 0.010	0.035	0.28	< 0.0020	0.77	---	32	5.7	5.0
	14-Aug-2018	Grab	120	< 1.0	8.7	57	< 1.0	38	< 0.060	12	< 0.0040	0.84	7.6	---	98	< 1.0	---	330	140	---	190	220	130 [#2]	0.033	0.095	0.021	< 0.033	< 0.010	0.021	0.64	0.016	2.9	< 2.0	41	4.9	5.2
	18-Oct-2018	Grab	110	< 1.0	11	32	< 1.0	30	< 0.060	10	0.0093	0.91	10	---	86	< 1.0	---	260	120	---	160	58	7.3 [#2]	< 0.015	0.35	0.079	< 0.033	< 0.010	0.079	0.21	0.0050	1.4	2.1	22	2.8	3.1
	10-Jun-2019	Grab	98	< 1.0	5.8	37	< 1.0	31	< 0.060	8.1	< 0.0040	0.78	5.7	---	80	< 1.0	19	250	110	8.00	180	150	120 [#2]	< 0.015	0.23	0.052	< 0.033	< 0.010	0.052	0.44	0.0090	1.6	< 2.0 [#13]	45	6.8	5.8
	26-Aug-2019	Grab	120	< 1.0	9.6	57	< 1.0	38	< 0.060	12	< 0.0040	0.86	8.2	---	99	< 1.0	9.8	330	150	8.20	190	55	49 [#2]	0.027	0.17	0.038	< 0.033	< 0.010	0.038	0.30	---	2.3	< 2.0	21	5.2	4.7
	27-Aug-2019	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0050	---	---	---	---	---
	01-Oct-2019	Grab	120	< 1.0	11	60	< 1.0	39	< 0.060	11	< 0.0040	0.93	8.9	---	96	< 1.0	21	320	140	8.07	220	76	92 [#2]	0.020	0.15	0.033	< 0.033	< 0.010	0.033	0.37	0.011	3.2	2.2	45	6.7	5.9
	12-Jun-2020	Grab	120	< 1.0	4.7	40	< 1.0	32	< 0.060	8.9	< 0.0040	0.74	5.2	---	100	< 1.0	29	250	120	6.69	180	190 [#9]	100 [#2]	0.023	0.26	0.058	< 0.033	< 0.010	0.058	0.69 [#11]	< 0.0020	7.4	< 2.0	84	5.8	5.8 [#10]
	28-Jul-2020	Grab	120	< 1.0	5.8	45	< 1.0	35	< 0.060	9.9	< 0.0040	0.70	6.1	---	95	< 1.0	22	280	130	7.66	170	130	60 [#2]	< 0.015	0.088	0.020	< 0.033	< 0.010	0.020	0.50 [#11]	< 0.019	2.7	< 2.0	24	6.6	6.0
	22-Sep-2020	Grab	140	< 1.0	6.4	44	< 1.0	35	< 0.060	9.8	< 0.0040	0.85	6.7	---	110	< 1.0	20	300	130	7.75	190 [#14]	39	22 [#2]	< 0.015	0.22	0.049	< 0.033	< 0.010	0.049	0.32	0.012	8.5	< 2.0	20	6.0	5.9
	07-Jun-2021	Grab	110	< 1.0	5.8	35	< 1.0	32	< 0.060	8.5	< 0.0040	1.1	6.4	---	91	< 1.0	33	260	120	---	240	140	72 [#2]	0.019	0.29	0.066	< 0.033	< 0.010	0.066	0.56	0.017	1.5	< 2.0 [#4]	24	8.4	6.2 [#10]

Table 2

Surface Water Analytical Results: Indicator Analysis Parameters

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Anions					Cations							General									Inorganic Nitrogen Compounds							Inorganic Sulphur Compounds	Ion Balance	Miscellaneous			
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Fluoride (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Colour (color unit)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	pH (pH Units)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Ammonia (Total; as N) (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Sulphide (asH2S) (mg/L)	Ion Balance % Difference (%)	Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	120	---	---	---	0.3	---	---	---	---	0.12	---	---	---	---	---	(6.5 - 9)	---	---	---	8.5	---	2.9	---	0.06	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			---	---	---	---	---	None required	---	---	0.12	---	---	1.5	---	---	---	---	---	---	---	---	1	None required	45	10	3	1	---	---	---	---	---	---	---	---
(Duplicate)	07-Jun-2021	Grab	110	< 1.0	5.8	34	< 1.0	33	0.070	8.6	< 0.0040	1.1	6.4	---	87	< 1.0	32	260	120	---	210	120	**78** [#2]	< 0.015	0.30	0.068	< 0.033	< 0.010	0.068	0.52	0.029	1.1	< 2.0 [#4]	23	8.7	7.0
	19-Aug-2021	Grab	110	< 1.0	6.8	42	< 1.0	37	< 0.060	11	< 0.0040	1.1	7.0	0.093	90	< 1.0	28	290	140	---	180	230 [#9]	**180** [#2]	< 0.015	0.17	0.038	< 0.033	< 0.010	0.038	0.44	0.027	3.0	< 2.0 [#15]	29	5.9	6.3
	18-Sep-2021	Grab	160	< 1.0	7.5	45	< 1.0	37	< 0.060	10	< 0.0040	1.0	8.0	0.10	130	< 1.0	21	300	140	---	**250**	61	**43** [#2]	< 0.015	0.18	0.041	< 0.033	< 0.010	0.041	0.29	0.0098	9.3	< 2.0 [#16]	33	8.2	6.6
	31-Mar-2022	Grab	---	---	---	---	---	**45**	< 0.060	12	< 0.0040	1.4	13	---	---	---	13	---	---	8.02	210	3.5	**7.0** [#2]	< 0.015	0.78	0.18	< 0.033	< 0.010	0.18	0.23	0.0060	---	< 2.0 [#3]	14	6.4	5.6
	14-Jun-2022	Grab	99	< 1.0	**2.7**	34	< 1.0	30	< 0.060	7.7	< 0.0040	0.87	3.9	0.077	81	< 1.0	41	220	110	7.45	160	550 [#9]	**410** [#2,11]	< 0.015	0.23	0.051	< 0.033	< 0.010	0.051	0.48	0.026	2.4	< 2.0	71	6.4	7.1
	06-Aug-2022	Grab	110	< 1.0	7.1	47	< 1.0	38	< 0.060	11	< 0.0040	1.1	8.0	0.090	94	< 1.0	14	290	140	7.75	200	63	**45** [#2]	< 0.015	0.15	0.033	< 0.033	< 0.010	0.033	0.31	< 0.0020	0.96	< 2.0	22	6.4	5.3
(Duplicate)	06-Aug-2022	Grab	130	< 1.0	6.8	49	< 1.0	36	< 0.060	9.6	< 0.0040	1.0	7.4	0.090	110	< 1.0	14	300	130	7.76	190	92	**49** [#2]	< 0.015	0.15	0.033	< 0.033	< 0.010	0.033	0.31	< 0.0020	6.6	< 2.0	24	6.1	4.9
	25-Sep-2022	Grab	140	< 1.0	9.7	46	< 1.0	37	< 0.060	10	< 0.0040	0.99	8.4	0.10	120	< 1.0	8.3	300	130	7.36	190	19	**15** [#2]	< 0.015	0.11	0.025	< 0.033	< 0.010	0.025	0.21	< 0.0020	7.9	< 2.0	24	4.9	4.5
	09-Mar-2023	Grab	140	< 1.0	**17**	51	< 1.0	**46**	< 0.060	12	< 0.0040	1.2	14	---	120	< 1.0	---	360	160	---	210	---	---	< 0.015	0.78	0.18	< 0.033	< 0.010	0.18	0.17	< 0.0020	0.0060	---	---	4.2	4.0
	25-Jul-2023	Grab	130	< 1.0	8.6	48	< 1.0	36	< 0.060	11	< 0.0040	0.98	7.7	---	100	< 1.0	6.9	310	130	7.55	110	45	**27** [#2]	< 0.015	0.17	0.038	< 0.033	< 0.010	0.038	0.12	< 0.0020	5.0	---	10	5.4	3.8
	19-Aug-2023	Grab	150	< 1.0	8.3	**60**	< 1.0	40	< 0.060	11	0.0044	0.90	7.6	---	120	< 1.0	9.4	330	150	---	200	220	**87** [#2]	< 0.015	0.30	0.068	< 0.033	< 0.010	0.068	0.16	0.0095	9.8	---	16	4.0	4.0
	25-Sep-2023	Grab	130	< 1.0	13	56	< 1.0	**42**	< 0.060	12	< 0.0040	1.0	10	---	110	< 1.0	7.3	340	150	---	170	14	**13** [#2]	< 0.015	0.23	0.052	< 0.033	< 0.010	0.052	0.18	< 0.0020	2.4	---	21	3.5	3.2
	18-Mar-2024	Grab	140	< 1.0	**22**	54	< 1.0	**47**	< 0.060	**13**	< 0.0040	1.3	15	---	120	< 1.0	6.9	390	170	8.02	**230**	< 1.0	**3.9** [#2]	< 0.015	0.84	0.19	< 0.033	< 0.010	0.19	0.088	< 0.0020	0.34	---	14	4.5	4.2
	19-Jul-2024	Grab	120	< 1.0	6.9	**57**	< 1.0	39	< 0.060	11	< 0.0040	0.95	7.3	---	95	< 1.0	9.0	310	140	7.82	190	260 [#9]	**240** [#2]	< 0.015	0.40	0.091	< 0.033	< 0.010	0.091	< 0.20	0.028	1.7	---	25	4.4	3.5
	15-Aug-2024	Grab	130	< 1.0	8.5	55	< 1.0	40	< 0.060	12	< 0.0040	0.83	8.0	---	100	< 1.0	6.7	330	150	7.85	210	50	**50** [#2]	< 0.015	0.25	0.056	< 0.033	< 0.010	0.056	0.23	0.011	2.9	---	24	2.9	3.2
	17-Sep-2024	Grab	130	< 1.0	9.4	**61**	< 1.0	40	< 0.060	**13**	< 0.0040	0.89	8.3	---	110	< 1.0	4.8	350	150	7.10	210	21	**16** [#2]	< 0.015	0.16	0.035	< 0.033	< 0.010	0.035	< 0.20	0.0035	3.1	---	< 10 [#7]	3.5	2.4
AEMP-DS-04 (Refinery)	21-Aug-2017	Grab	110	< 0.50	9.1	41	< 0.50	31	< 0.060	9.7	< 0.0040	0.79	8.1	---	88	< 0.50	---	270	120	---	170	35	---	---	0.25	0.056	< 0.033	< 0.010	0.056	---	---	3.1	< 2.0 [#3]	---	4.5	3.6
(Duplicate)	21-Aug-2017	Grab	100	< 0.50	9.2	41	< 0.50	30	< 0.060	9.5	< 0.0040	0.82	8.0	---	86	< 0.50	---	270	110	---	180	37	---	---	0.25	0.056	< 0.033	< 0.010	0.056	---	---	2.9	< 2.0 [#3]	---	4.0	3.1
	16-Sep-2017	Grab	100	< 0.50	9.7	35	< 0.50	30	< 0.060	9.8	< 0.0040	0.88	8.6	---	86	< 0.50	---	260	110	---	140	25	---	---	0.31	0.070	< 0.033	< 0.010	0.070	---	< 0.0020	0.77	< 2.0 [#4]	---	5.2	4.2
	16-Oct-2017	Grab	100	< 0.50	10	37	< 0.50	29	< 0.060	9.5	0.022	0.85	8.8	---	82	< 0.50	---	260	110	---	170	17	---	---	0.37	0.083	< 0.033	< 0.010	0.083	---	< 0.0020	1.3	< 2.0 [#8]	---	3.8	3.3
	23-Jun-2018	Grab	93	< 1.0	7.7	33	< 1.0	27	< 0.060	8.4	< 0.0040	0.78	6.9	---	76	< 1.0	---	230	100	---	120	43	**44** [#2]	0.022	0.23	0.053	< 0.033	< 0.010	0.053	0.31	0.0050	1.0	---	32	5.0	5.0
	13-Aug-2018	Grab	110	< 1.0	11	43	< 1.0	31	< 0.060	10	< 0.0040	0.79	8.9	---	87	< 1.0	---	290	120	---	180	110	**56** [#2]	0.028	0.15	0.034	< 0.033	< 0.010	0.034	0.43	0.0040	2.9	---	41	4.6	5.0
	15-Aug-2018	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.14	0.032	< 0.033	< 0.010	0.032	---	---	---	< 2.0	---	---	---
	17-Oct-2018	Grab	100	< 1.0	11	35	< 1.0	28	< 0.060	9.5	0.013	0.94	10	---	82	< 1.0	---	260	110	---	150	24	**12** [#2]	< 0.015	0.40	0.091	< 0.033	< 0.010	0.091	0.18	< 0.0020	0.70	---	9.2	3.0	2.5
(Duplicate)	17-Oct-2018	Grab	100	< 1.0	12	36	< 1.0	28	< 0.060	9.6	0.018	0.94	10	---	83	< 1.0	---	260	110	---	150	27	**22** [#2]	< 0.015	0.40	0.090	< 0.033	< 0.010	0.090	0.13	0.0020	1.3	---	6.1	3.0	2.6
	18-Oct-2018	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.9 [#3]	---	---	---
(Duplicate)	18-Oct-2018	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.6 [#3]	---	---	---
	03-Jun-2019	Grab	100	< 1.0	8.8	35	< 1.0	28	< 0.060	8.6	0.0098	0.81	8.7	---	82	< 1.0	18	260	100	8.16	170	230	**190** [#2]	< 0.015	0.35	0.078	< 0.033	< 0.010	0.078	0.52	0.017	2.8	2.5	62	6.0	5.4
	25-Aug-2019	Grab	100	< 1.0	11	38	< 1.0	29	< 0.060	10	< 0.0040	0.81	8.2	---	85	< 1.0	5.9	270	110	8.12	160	18	**22** [#2]	0.044 [#17]	0.34	0.077	< 0.033	< 0.010	0.077	0.22	---	2.6	---	15	4.5	3.8
	27-Aug-2019	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0020	---	< 2.0 [#3]	---	---	---
	02-Oct-2019	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 2.0	---	---	---
	03-Oct-2019	Grab	100	< 1.0	9.7	35	< 1.0	29	< 0.060	9.6	0.029	0.78	7.9	---	85	< 1.0	8.9	260	110	8.03	140	920	**120** [#2]	0.027	0.34	0.078	< 0.033	< 0.010	0.078	0.78	0.0070	1.8	---	81	3.7	3.8
	10-Jun-2020	Grab	97	< 1.0	7.3	31	< 1.0	26	< 0.060	7.3	< 0.0040	0.73	5.9	---	79	< 1.0	25	230	95	6.83	**88**	250 [#9]	**93** [#2]	< 0.015	0.32	0.073	< 0.033	< 0.010	0.073	0.77 [#11]	< 0.010	5.7	< 2.0 [#3]	31	6.0	7.1 [#10]
	24-Jul-2020	Grab	97	< 1.0	7.3	37	< 1.0	29	< 0.060	8.8	< 0.0040	0.77	6.9	---	79	< 1.0	22	260	110	7.98	150	92	**41** [#2]	0.017	0.23	0.052	< 0.033	< 0.010	0.052	0.38	0.014	1.1	< 2.0	30	5.3	4.4
(Duplicate)	24-Jul-2020	Grab	100	< 1.0	7.3	37	< 1.0	29	< 0.060	8.8	< 0.0040	0.78	6.8	---	82	< 1.0	22	260	110	7.92	150	88	**40** [#2]	< 0.015	0.23	0.053	< 0.033	< 0.010	0.053	0.44	< 0.010	2.2	< 2.0	25	5.0	4.9
	18-Sep-2020	Grab	100	< 1.0	7.4	34	< 1.0	33	< 0.060	9.1	< 0.0040	0.73	7.0	---	82	< 1.0	16	260	120	8.09	200	36	**19** [#2]	< 0.015	0.27	0.061	< 0.033	< 0.010	0.061	0.34	0.011	2.7	< 2.0	17	5.4	4.7
(Duplicate)	18-Sep-2020	Grab	110	< 1.0	7.2	34	< 1.0	30	< 0.060	8.8	< 0.0040	0.84	7.1	---	88	< 1.0	15	260	110	8.07	120	36	**17** [#2]	< 0.015	0.28	0.063	< 0.033	< 0.010	0.063	0.27	0.0086	2.3	< 2.0	20	6.0	4.8
	06-Jun-2021	Grab	130	< 1.0	6.2	27	< 1.0	30	0.17	8.5	0.0073	1.1	6.7	0.095	100	< 1.0	32	240	110	---	140	120	**90** [#2]	< 0.015	0.37	0.083	< 0.033	< 0.010	0.083	0.68	0.023	6.0	< 2.0 [#4]	26	6.6	7.2
	18-Aug-2021	Grab	100	< 1.0	6.9	37	< 1.0	32	< 0.060	9.7	0.0044	1.0	7.4	0.097	85	< 1.0	16	260	120	---	200	230 [#9]	**220** [#2]	0.020	0.23	0.051	< 0.033	< 0.010	0.051	0.25	0.016	1.3	< 2.0	20	6.0	5.3
	17-Sep-2021	Grab	110	< 1.0	8.2	36	< 1.0	34	< 0.060	10	< 0.0040	0.95	7.7	0.11	94	< 1.0	15	260	130	8.07	190	21	**22** [#2]	< 0.015	0.31	0.069	< 0.033	< 0.010	0.069	0.24	< 0.0020	0.18	< 2.0 [#3]	13	5.4	4.9
	12-Jun-2022	Grab	110	< 1.0	5.0	36	< 1.0	32	0.076	9.4	0.0059	1.2	6.4	0.085	87	< 1.0	34	250	120	7.64	180	450 [#9]	**290** [#2,11]	< 0.015	0.22	0.050	< 0.033	< 0.010	0.050	0.50	0.034	1.4	< 2.0	40	7.8	6.7
	06-Aug-2022	Grab	110	< 1.0	7.4	38	< 1.0	30	< 0.060	8.5	0.067	0.94	7.4	0.084	87	< 1.0	13	260	110	7.69	180	700 [#9]	**300** [#2,11]	0.032	0.23	0.053	< 0.033	< 0.010	0.053	0.65	0.030	3.9	< 2.0	86	5.4	5.0
(Duplicate)	06-Aug-2022	Grab	110	< 1.0	9.1	37	< 1.0	30	< 0.060	8.8	0.069	0.94	7.6	0.084	86	< 1.0	14	260	110	7.77	180	1000 [#9]	**380** [#2,11]	0.043	0.26	0.058	< 0.033	< 0.010	0.058	0.73	0.033	3.5	< 2.0	70	5.3	5.3
	24-Sep-2022	Grab	110	< 1.0	9.4	37	< 1.0	31	< 0.060	9.1	0.068	0.95	8.1	0.10	93	< 1.0	7.1	260	110	7.07	160	430	**180** [#2]	0.042	0.25	0.057	< 0.033	< 0.010	0.057	0.49	0.0040	4.5	< 2.0 [#3]	41	4.1	4.1
(Duplicate)	24-Sep-2022	Grab	110	< 1.0	9.4	36	< 1.0	31	< 0.060	9.4	0.073	0.96	8.3	0.10	88	< 1.0	8.5	260	120	6.90	160	440	**160** [#2]	0.045	0.24	0.055	< 0.033	< 0.010	0.055	< 0.40	0.0030	1.6	< 2.0 [#3]	45	4.7	3.8
	11-Mar-2023	Grab	94	< 1.0	11	29	< 1.0	26	< 0.060	9.4	< 0.0040	0.84	8.7	---	77	< 1.0	---	230	100	---	120	---	---	< 0.015	1.2	0.26	< 0.033	< 0.010	0.26	0.051	< 0.0020	0.41	---	---	3.6	2.0
	26-Jul-2023	Grab	120	< 1.0	9.6	41	< 1.0	34	< 0.060	11	< 0.0040	1.0	8.8	---	96	< 1.0	6.2	290	130	7.36	170	34	**21** [#2]	< 0.015	0.27	0.061	< 0.033	< 0.010	0.061	0.10	< 0.0020	1.1	---	21	3.7	3.0
(Duplicate)	26-Jul-2023	Grab	120	< 1.0	9.6	40	< 1.0	32	< 0.060	9.8	< 0.0040	0.95	8.2	---	99	< 1.0	5.9	280	120	7.11	160	24	**19** [#2]	< 0.015	0.22	0.050	< 0.033	< 0.010	0.050	0.12	< 0.0020	5.5	---	16	3.5	3.1
	18-Aug-2023	Grab	120	< 1.0	10	46	< 1.0	32	< 0.060	9.6	0.0040	0.84	7.6	---	98	< 1.0	7.5	270	120	---	170	90	**63** [#2]	< 0.015	0.39	0.089	< 0.033	< 0.010	0.089	0.22	< 0.0020	8.1	---	22	3.7	4.0
	24-Sep-2023	Grab	110	< 1.0	12	40	< 1.0	32	< 0.060	10	< 0.0040	0.88	8.8	---	89	< 1.0	3.9	280	120	---	**100**	12	**9.4** [#2]	< 0.015	0.43	0.097	< 0.033	< 0.010	0.097	0.11	< 0.0020	2.0	---	21	2.6	2.2
	18-Mar-2024	Grab	100	< 1.0	14	35	< 1.0	29	< 0.060	9.5	< 0.0040	0.93	9.5	---	86	< 1.0	2.6	270	110	8.02	160	< 1.0	**1.5** [#2]	< 0.015	0.90	0.20	< 0.033	< 0.010	0.20	0.097	< 0.0020	2.8	---	15	3.0	2.8

Table 2

Surface Water Analytical Results: Indicator Analysis Parameters

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Anions					Cations							General									Inorganic Nitrogen Compounds							Inorganic Sulphur Compounds	Ion Balance	Miscellaneous			
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Fluoride (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Colour (color unit)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	pH (pH Units)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Ammonia (Total; as N) (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Sulphide (asH2S) (mg/L)	Ion Balance % Difference (%)	Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	120	---	---	---	0.3	---	---	---	---	0.12	---	---	---	---	---	(6.5 - 9)	---	---	---	8.5	---	2.9	---	0.06	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			---	---	---	---	---	None required	---	---	0.12	---	---	1.5	---	---	---	---	---	---	---	---	1	None required	45	10	3	1	---	---	---	---	---	---	---
(Duplicate)	18-Mar-2024	Grab	100	< 1.0	14	35	< 1.0	29	< 0.060	9.5	< 0.0040	0.99	9.6	---	85	< 1.0	4.3	270	110	8.00	160	< 1.0	**1.8** [#2]	< 0.015	0.84	0.19	< 0.033	< 0.010	0.19	0.12	< 0.0020	2.9	---	< 10 [#12]	3.2	2.8
	20-Jul-2024	Grab	110	< 1.0	8.1	47	< 1.0	34	< 0.060	10	0.0042	0.96	7.8	---	91	< 1.0	6.6	290	130	7.90	170	53	**72** [#2]	< 0.015	0.37	0.083	< 0.033	< 0.010	0.083	< 0.20	0.016	2.3	---	12	3.5	2.8
	16-Aug-2024	Grab	110	< 1.0	8.7	44	< 1.0	32	< 0.060	9.9	0.025	0.91	7.9	---	94	< 1.0	5.1	290	120	7.63	180	750 [#9]	**160** [#2]	< 0.015	0.27	0.060	< 0.033	< 0.010	0.060	0.42	0.015	4.1	---	36	2.6	3.1
	13-Sep-2024	Grab	120	< 1.0	8.8	44	< 1.0	31	< 0.060	10	< 0.0040	0.79	7.3	---	100	< 1.0	6.6	290	120	7.46	160	2.1	**2.6** [#2]	< 0.015	0.21	0.048	< 0.033	< 0.010	0.048	< 0.20	< 0.0020	8.0	---	21	3.6	3.0
AEMP-DS-05 (Radar North)	23-Jun-2018	Grab	96	< 1.0	6.8	35	< 1.0	29	< 0.060	8.4	< 0.0040	0.82	6.4	---	79	< 1.0	---	240	110	---	140	78	**37** [#2]	0.024	0.18	0.039	< 0.033	< 0.010	0.039	0.29	< 0.0020	0.76	---	31	5.2	5.0
	14-Aug-2018	Grab	110	< 1.0	9.3	44	< 1.0	37	< 0.060	10	0.0043	0.79	7.6	---	91	< 1.0	---	290	130	---	180	61	**45** [#2]	0.015	0.13	0.029	< 0.033	< 0.010	0.029	0.27	0.0040	0.35	< 2.0	28	4.3	4.8
	18-Oct-2018	Grab	110	< 1.0	12	36	< 1.0	29	< 0.060	9.3	< 0.0040	0.96	9.3	---	88	< 1.0	---	280	110	---	150	81	**23** [#2]	< 0.015	0.40	0.090	< 0.033	< 0.010	0.090	0.24	0.0020	3.9	< 2.0	16	3.1	2.7
	10-Jun-2019	Grab	92	< 1.0	7.7	31	< 1.0	28	< 0.060	7.6	< 0.0040	0.75	5.8	---	76	< 1.0	20	230	100	7.99	160	200	**120** [#2]	< 0.015	0.27	0.061	< 0.033	< 0.010	0.061	0.39	0.0060	1.8	< 2.0 [#13]	41	6.4	5.6
	26-Aug-2019	Grab	120	< 1.0	9.8	**60**	< 1.0	35	< 0.060	11	< 0.0040	0.85	8.1	---	98	< 1.0	9.8	310	130	8.18	180	47	**43** [#2]	0.026	0.18	0.040	< 0.033	< 0.010	0.040	0.28	---	6.4	< 2.0	20	4.9	4.4
	27-Aug-2019	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0040	---	---	---	---	---
	01-Oct-2019	Grab	110	< 1.0	10	56	< 1.0	37	**0.91** [#1]	11	0.054	0.92	9.6	---	94	< 1.0	18	320	140	8.27	200	130	**120** [#2]	0.051 [#18]	0.25	0.056	< 0.033	< 0.010	0.056	0.44	0.0060	1.5	---	47	5.5	5.3
	02-Oct-2019	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 2.0	---	---	---
	12-Jun-2020	Grab	120	< 1.0	5.4	33	< 1.0	29	< 0.060	7.7	< 0.0040	0.82	5.7	---	97	< 1.0	29 [#19]	230	100	6.69	180	700 [#9]	**650** [#2]	0.024	0.27	0.062	< 0.033	< 0.010	0.062	1.0	< 0.010	8.4	< 2.0	95	5.9	4.4 [#10]
	28-Jul-2020	Grab	110	< 1.0	5.8	39	< 1.0	33	< 0.060	8.9	< 0.0040	0.79	6.4	---	92	< 1.0	20	270	120	7.71	160	110	**27** [#2]	< 0.015	0.090	0.020	< 0.033	< 0.010	0.020	0.73 [#11]	0.0038	3.0	< 2.0	29	6.3	5.4
	22-Sep-2020	Grab	130	< 1.0	7.1	38 [#17]	< 1.0	32	< 0.060	9.1	< 0.0040	0.86	6.7	---	110	< 1.0	18	280	120	7.63	**88**	43	**20** [#2]	< 0.015	0.24	0.055	< 0.033	< 0.010	0.055	0.29	0.012	7.5	< 2.0	23	6.0	5.9
	07-Jun-2021	Grab	110	< 1.0	6.3	31	< 1.0	29	< 0.060	7.4	< 0.0040	1.1	6.1	0.10	91	< 1.0	38	250	100	7.75	**100** [#14]	110	**71** [#2]	0.016	0.30	0.068	< 0.033	< 0.010	0.068	0.59	0.022	5.8	< 2.0 [#4]	43	8.5	6.6 [#10]
	19-Aug-2021	Grab	110	< 1.0	6.7	40	< 1.0	31	< 0.060	8.6	< 0.0040	0.90	6.8	0.090	89	< 1.0	28	270	110	---	180	190 [#9]	**160** [#2]	< 0.015	0.17	0.038	< 0.033	< 0.010 [#14]	0.038 [#14]	0.38	0.033	4.0	< 2.0 [#15]	51	7.7	6.0
(Duplicate)	19-Aug-2021	Grab	110	< 1.0	6.6	39	< 1.0	32	< 0.060	8.6	< 0.0040	0.90	6.8	0.094	90	< 1.0	25	270	110	---	170	250 [#9]	**160** [#2]	< 0.015	0.18	0.040	< 0.033	< 0.010 [#14]	0.040 [#14]	0.74	0.029	3.9	< 2.0 [#15]	55	6.0	6.4
	18-Sep-2021	Grab	130	< 1.0	7.8	37	< 1.0	34	< 0.060	9.7	< 0.0040	0.95	7.8	0.10	110	< 1.0	21	280	130	---	200	60	**43** [#2]	< 0.015	0.21	0.047	< 0.033	< 0.010	0.047	0.27	0.012	4.1	< 2.0 [#16]	20	6.9	5.9
	10-Aug-2022	Grab	110	< 1.0	8.2	38	< 1.0	32	< 0.060	9.3	< 0.0040	0.94	7.4	0.093	88	< 1.0	9.1	260	120	7.65	160	91	**49** [#2]	< 0.015	0.25	0.057	< 0.033	< 0.010	0.057	< 0.20	0.012	1.9	< 2.0	14	5.2	4.1
	11-Mar-2023	Grab	99	< 1.0	12	35	< 1.0	30	< 0.060	11	< 0.0040	0.87	10	---	81	< 1.0	---	260	120	---	160	---	---	< 0.015	1.1	0.26	< 0.033	< 0.010	0.26	0.12	< 0.0020	2.0	---	---	3.4	2.1
	25-Jul-2023	Grab	140	< 1.0	10	42	< 1.0	34	< 0.060	9.8	< 0.0040	0.93	8.2	---	110	< 1.0	5.0	290	120	---	110	19	**16** [#2]	< 0.015	0.16	0.036	< 0.033	< 0.010	0.036	0.13	< 0.0020	8.7	---	12	3.6	3.2
	19-Aug-2023	Grab	130	< 1.0	9.1	47	< 1.0	35	< 0.060	10	< 0.0040	0.85	7.4	---	100	< 1.0	9.4	290	130	---	180	35	**41** [#2]	< 0.015	0.23	0.053	< 0.033	< 0.010	0.053	0.14	0.0081	6.9	---	18	4.1	3.2
	26-Sep-2023	Grab	130	< 1.0	12	44	< 1.0	35	0.10	11	0.0080	0.97	9.5	---	110	< 1.0	9.9	300	130	---	170	120	**69** [#2]	< 0.015	0.28	0.064	< 0.033	< 0.010	0.064	---	0.0037	4.2	---	28	3.1	3.0
	17-Mar-2024	Grab	110	< 1.0	11	33	< 1.0	36	< 0.060	12	< 0.0040	1.1	12	---	86	< 1.0	3.0	270	140	7.93	170	< 1.0	0.10	< 0.015	1.1	0.25	< 0.033	< 0.010	0.25	0.091	< 0.0020	9.7	---	< 10 [#6]	3.0	2.9
	19-Jul-2024	Grab	110	< 1.0	7.6	47	< 1.0	36	< 0.060	9.9	< 0.0040	0.95	7.4	---	92	< 1.0	6.7	290	130	7.90	180	280 [#9]	**250** [#2]	< 0.015	0.38	0.085	< 0.033	< 0.010	0.085	< 0.20	0.030	1.5	---	10	3.7	3.1
	15-Aug-2024	Grab	130	< 1.0	8.4	48	< 1.0	36	< 0.060	11	< 0.0040	0.96	7.9	---	110	< 1.0	6.3	310	130	7.82	180	16	**14** [#2]	< 0.015	0.26	0.059	< 0.033	< 0.010	0.059	0.14	< 0.0020	5.9	---	13	3.0	3.0
	17-Sep-2024	Grab	120	< 1.0	8.9	48	< 1.0	36	< 0.060	11	< 0.0040	0.98	8.4	---	98	< 1.0	4.2	310	130	6.95	180	61	**26** [#2]	< 0.015	0.19	0.043	< 0.033	< 0.010	0.043	< 0.20	0.0046	2.0	---	15	3.1	2.4
AEMP-DS-06 (FGH Blue Fish)	10-Mar-2023	Grab	140	< 1.0	**17**	51	< 1.0	**46**	< 0.060	12	< 0.0040	1.2	15	---	110	< 1.0	---	350	170	---	200	---	---	< 0.015	0.71	0.16	< 0.033	< 0.010	0.16	0.16	< 0.0020	3.2	---	---	3.7	3.6
(Duplicate)	10-Mar-2023	Grab	130	< 1.0	**18**	51	< 1.0	**46**	< 0.060	12	< 0.0040	1.1	15	---	110	< 1.0	---	350	170	---	220	---	---	< 0.015	0.72	0.16	< 0.033	< 0.010	0.16	0.12	< 0.0020	3.4	---	---	3.7	3.5
	24-Jul-2023	Grab	210	< 1.0	11	**70**	< 1.0	**42**	< 0.060	**13**	0.0048	0.91	9.2	---	170	< 1.0	7.8	370	160	7.66	210	17	**24** [#2]	< 0.015	0.25	0.056	0.039	0.012	0.068	0.095	0.022	18	---	11	3.0	2.8
	21-Aug-2023	Grab	140	< 1.0	9.7	**83**	< 1.0	**43**	< 0.060	**14**	< 0.0040	0.93	8.6	---	110	< 1.0	8.9	370	170	---	**230**	54	**49** [#2]	0.016	0.22	0.050	< 0.033	< 0.010	0.050	0.16	< 0.0020	6.8	---	25	3.3	2.8
	03-Oct-2023	Grab	150	< 1.0	10	**110**	< 1.0	**48**	< 0.060	**20**	0.0059	0.94	12	---	120	< 1.0	9.6	430	200	---	**240**	13	**19** [#2]	< 0.015	0.36	0.081	< 0.033	< 0.010	0.081	0.12	< 0.0020	4.9	---	16	3.9	3.7
	15-Mar-2024	Grab	150	< 1.0	**18**	**67**	< 1.0	**56**	< 0.060	**17**	< 0.0040	1.3	17	---	130	< 1.0	6.7	430	210	---	**280**	150	**51** [#2]	< 0.015	1.7	0.38	< 0.033	< 0.010	0.38	0.59	0.0073	5.8	---	22	4.8	5.2
	17-Jul-2024	Grab	130	< 1.0	9.0	**69**	< 1.0	**43**	< 0.060	**15**	0.013	0.91	8.5	---	100	< 1.0	7.7	380	170	6.99	200	79	**97** [#2]	< 0.015	0.35	0.079	< 0.033	< 0.010	0.079	< 0.20	0.016	0.65	---	24	3.5	2.9
	14-Aug-2024	Grab	120	< 1.0	8.9	**84**	< 1.0	**47**	< 0.060	**16**	< 0.0040	0.87	9.4	---	97	< 1.0	8.1	380	180	8.14	**240**	27	**26** [#2]	< 0.015	0.30	0.068	< 0.033	< 0.010	0.068	< 0.20	< 0.0020	1.6	---	20	2.9	2.8
	18-Sep-2024	Grab	120	< 1.0	7.1	**140**	< 1.0	**48**	0.062	**21**	0.0058	0.95	11	---	96	< 1.0	17	470	200	7.98	**290**	15	**32** [#2]	< 0.015	0.27	0.061	< 0.033	< 0.010	0.061	0.26	0.0051	4.6	---	14	4.3	4.6
AEMP-DS-07 (FGH Ramparts)	17-Jul-2024	Grab	130	< 1.0	7.3	43	< 1.0	34	< 0.060	11	< 0.0040	0.84	7.4	---	100	< 1.0	8.5	330	130	7.03	150	170	**120** [#2]	< 0.015	0.28	0.062	< 0.033	< 0.010	0.062	0.25	0.019	4.0	---	29	3.6	3.2
	14-Aug-2024	Grab	110	< 1.0	7.4	49	< 1.0	38	< 0.060	11	0.0043	0.85	7.7	---	91	< 1.0	7.2	290	140	8.05	180	300	**110** [#2]	< 0.015	0.23	0.053	< 0.033	< 0.010	0.053	< 0.20	0.013	2.0	---	41	3.3	3.2
	18-Sep-2024	Grab	120	< 1.0	9.1	**62**	< 1.0	38	< 0.060	11	< 0.0040	1.0	8.6	---	98	< 1.0	4.7	330	140	8.02	200	22	**10** [#2]	< 0.015	0.20	0.045	< 0.033	< 0.010	0.045	0.13	0.0041	5.2	---	< 10 [#7]	3.0	2.1
AEMP-DS-08 (Radar South)	19-Jul-2024	Grab	110	< 1.0	7.7	49	< 1.0	35	< 0.060	9.9	< 0.0040	0.93	7.7	---	88	< 1.0	6.3	290	130	7.78	180	210 [#9]	**200** [#2]	< 0.015	0.74	0.17	< 0.033	< 0.010	0.17	< 0.20	0.031	1.8	---	< 10 [#6]	4.2	3.3
	15-Aug-2024	Grab	130	< 1.0	8.6	48	< 1.0	33	< 0.060	10	< 0.0040	0.84	9.0	---	100	< 1.0	5.8	300	120	7.73	180	31	**28** [#2]	< 0.015	0.26	0.059	< 0.033	< 0.010	0.059	0.26	0.0057	6.6	---	25	2.9	2.8
	17-Sep-2024	Grab	120	< 1.0	9.0	47	< 1.0	34	< 0.060	10	< 0.0040	0.90	8.4	---	95	< 1.0	3.5	300	130	6.98	180	9.8	**6.7** [#2]	< 0.015	0.18	0.040	< 0.033	< 0.010	0.040	< 0.20	< 0.0020	3.7	---	< 10 [#7]	3.0	2.6
AEMP-DS-09 (End of Facility)	17-Mar-2024	Grab	140	< 1.0	**18**	51	< 1.0	**52**	< 0.060	**14**	< 0.0040	1.4	17	---	120	< 1.0	8.2	390	190	7.97	**240**	2.8	**2.5** [#2]	< 0.015	0.81	0.18	< 0.033	< 0.010	0.18	0.17	< 0.0020	6.9	---	32	6.2	4.5
	19-Jul-2024	Grab	120	< 1.0	7.1	**57**	< 1.0	39	< 0.060	11	< 0.0040	0.94	7.3	---	95	< 1.0	7.9	320	140	7.97	180	110	**150** [#2]	< 0.015	0.33	0.075	< 0.033	< 0.010	0.075	< 0.20	0.035	1.6	---	12	4.4	3.4
	15-Aug-2024	Grab	130	< 1.0	8.2	55	< 1.0	**43**	< 0.060	**13**	0.0072	0.98	8.2	---	110	< 1.0	7.0	340	160	8.07	210	38	**35** [#2]	< 0.015	0.22	0.049	< 0.033	< 0.010	0.049	0.33	0.0068	0.32	---	20	4.0	3.0
	17-Sep-2024	Grab	130	< 1.0	9.2	**62**	< 1.0	**42**	< 0.060	**13**	< 0.0040	0.96	8.5	---	110	< 1.0	5.1	360	160	7.22	220	9.9	**8.3** [#2]	0.023	0.14	0.032	< 0.033	< 0.010	0.032	< 0.20	< 0.0020	3.3	---	13	3.3	2.8
UPSTREAM																																				
AEMP-US-01 (Midway)	12-Mar-2023	Grab	87	< 1.0	9.8	22	< 1.0	23	< 0.060	8.9	< 0.0040	0.81	8.1	---	72	< 1.0	---	210	93	---	120	---	---	< 0.015	1.5	0.35	< 0.033	< 0.010	0.35	0.29	0.0039	0.96	---	---	2.5	1.8
	25-Jul-2023	Grab	120	< 1.0	11	37	< 1.0	30	< 0.060	9.2	< 0.0040	0.87	8.5	---	95	< 1.0	5.4	270	110	---	96	14	**15** [#2]	< 0.015	0.23	0.052	< 0.033	< 0.010	0.052	0.12	< 0.0020	6.5	---	12	3.5	2.9
	19-Aug-2023	Grab	130	< 1.0	11	35	< 1.0	9.6	< 0.060	2.7	< 0.0040	< 0.30	2.3	---	100	< 1.0	6.3	250	35	---	150	21	**23** [#2]	< 0.015	0.37	0.083	< 0.033	< 0.010	0.083	0.12	0.0061	59	---	22	2.6	2.5

Table 2

Surface Water Analytical Results: Indicator Analysis Parameters

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Anions					Cations							General									Inorganic Nitrogen Compounds							Inorganic Sulphur Compounds	Ion Balance	Miscellaneous			
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Fluoride (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Colour (color unit)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	pH (pH Units)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Ammonia (Total; as N) (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Sulphide (asH2S) (mg/L)	Ion Balance % Difference (%)	Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	120	---	---	---	0.3	---	---	---	---	0.12	---	---	---	---	---	(6.5 - 9)	---	---	---	8.5	---	2.9	---	0.06	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			---	---	---	---	---	None required	---	---	0.12	---	---	1.5	---	---	---	---	---	---	---	---	1	None required	45	10	3	1	---	---	---	---	---	---	---	---
	26-Sep-2023	Grab	100	< 1.0	10	28	< 1.0	24	< 0.060	8.9	< 0.0040	0.77	7.7	---	86	< 1.0	3.8	230	97	---	96	2.2	**4.5** [#2]	0.023	0.42	0.094	< 0.033	< 0.010	0.094	0.14	< 0.0020	5.8	---	16	2.5	2.5
	16-Mar-2024	Grab	99	< 1.0	11	29	< 1.0	25	< 0.060	9.5	< 0.0040	0.98	8.6	---	81	< 1.0	< 2.0	240	100	---	150	8.0	**7.3** [#2]	< 0.015	0.84	0.19	< 0.033	< 0.010	0.19	0.12	0.0043	2.4	---	25	2.3 [#20]	2.3
	19-Jul-2024	Grab	100	< 1.0	11	43	< 1.0	32	< 0.060	9.8	< 0.0040	0.94	9.4	---	83	< 1.0	9.5	280	120	7.76	180	440 [#9]	**270** [#2]	< 0.015	0.47	0.11	< 0.033	< 0.010	0.11	< 0.20	0.030	1.2	---	11	3.8	3.2
	15-Aug-2024	Grab	110	< 1.0	11	39	< 1.0	30	< 0.060	9.6	< 0.0040	0.85	9.3	---	89	< 1.0	5.0	270	110	7.83	160	8.0	**8.8** [#2]	< 0.015	0.29	0.065	< 0.033	< 0.010	0.065	0.14	< 0.0020	2.9	---	11	2.9	2.7
	17-Sep-2024	Grab	100	< 1.0	19	34	< 1.0	28	< 0.060	10	< 0.0040	0.91	13	---	84	< 1.0	4.1	280	110	6.88	160	13	**7.7** [#2]	< 0.015	0.28	0.063	< 0.033	< 0.010	0.063	0.14	< 0.0020	1.2	---	15	2.6	2.0
AEMP-US-02 (10 mile)	23-Jun-2018	Grab	99	< 1.0	7.3	38	< 1.0	31	< 0.060	8.7	< 0.0040	0.79	6.1	---	81	< 1.0	---	250	110	---	140	39	**40** [#2]	0.025	0.099	0.022	< 0.033	< 0.010	0.022	0.27	0.0040	1.3	---	33	5.8	5.1
	14-Aug-2018	Grab	120	< 1.0	8.6	49	< 1.0	36	< 0.060	11	< 0.0040	0.83	7.7	---	97	< 1.0	---	310	130	---	180	59	**51** [#2]	0.016	0.093	0.021	< 0.033	< 0.010	0.021	0.30	0.0040	3.0	< 2.0	25	4.5	4.8
(Duplicate)	14-Aug-2018	Grab	120	< 1.0	8.6	49	< 1.0	37	0.28	11	0.018	0.93	7.7	---	96	< 1.0	---	310	140	---	170	66	**51** [#2]	0.023	0.085	0.019	< 0.033	< 0.010	0.019	0.32	0.0030	0.69	< 2.0	26	5.3	4.9
	18-Oct-2018	Grab	100	< 1.0	11	33	< 1.0	28	< 0.060	9.5	0.0099	0.91	9.7	---	85	< 1.0	---	260	110	---	150	39	**12** [#2]	0.020	0.41	0.093	< 0.033	< 0.010	0.093	0.19	0.0030	1.3	< 2.0	9.2	2.9	3.0
	10-Jun-2019	Grab	96	< 1.0	6.2	35	< 1.0	30	< 0.060	7.6	< 0.0040	0.78	5.7	---	79	< 1.0	20	240	110	8.06	170	150	**120** [#2]	< 0.015	0.23	0.052	< 0.033	< 0.010	0.052	0.45	0.010	1.9	2.0 [#13]	44	7.3	6.0
	26-Aug-2019	Grab	120	< 1.0	11	50	< 1.0	35	< 0.060	11	< 0.0040	0.86	8.1	---	98	< 1.0	11	310	130	8.12	180	46	**43** [#2]	0.018	0.17	0.039	< 0.033	< 0.010	0.039	0.26	0.0050	3.7	< 2.0	26	5.7	4.6
	01-Oct-2019	Grab	120	< 1.0	9.9	60	< 1.0	39	< 0.060	11	< 0.0040	0.90	8.9	---	100	< 1.0	21	320	140	8.04	230	32	**75** [#2]	0.029	0.16	0.036	< 0.033	< 0.010	0.036	0.32	0.014	4.0	2.1	39	6.5	5.9
	12-Jun-2020	Grab	110	< 1.0	5.1	35	< 1.0	30	< 0.060	7.9	< 0.0040	0.78	5.4	---	87	< 1.0	31	240	110	6.84	180	280 [#9]	**92** [#2]	< 0.015	0.22	0.049	< 0.033	< 0.010	0.049	0.67 [#11]	< 0.0020	4.3	< 2.0	38	6.9	1.4
	28-Jul-2020	Grab	110	< 1.0	6.2	52	< 1.0	32	< 0.060	8.8	< 0.0040	0.72	6.1	---	90	< 1.0	21	280	120	7.75	170	110	**51** [#2]	< 0.015	0.087	0.020	< 0.033	< 0.010	0.020	1.1 [#11]	0.094	8.2	< 2.0	63	7.1	5.6
	22-Sep-2020	Grab	110	< 1.0	7.1	40	< 1.0	35	0.17	9.7	0.0077	0.90	6.8	---	93	< 1.0	20	290	130	8.14	200 [#14]	48	**21** [#2]	< 0.015	0.19	0.044	< 0.033	< 0.010	0.044	0.36	0.010	0.72	< 2.0	17	6.4	6.1
	07-Jun-2021	Grab	140	< 1.0	6.3	34	< 1.0	30	< 0.060	7.6	< 0.0040	1.0	6.1	0.092	110	< 1.0	31	250	110	7.19	130 [#14]	110	**79** [#2]	< 0.015	0.29	0.065	< 0.033	< 0.010	0.065	0.53	0.024	13	< 2.0 [#4]	34	8.7	7.9 [#10]
	19-Aug-2021	Grab	110	< 1.0	7.1	40	< 1.0	37	< 0.060	11	< 0.0040	1.0	7.6	0.091	91	< 1.0	27	280	140	---	190	170 [#9]	**160** [#2]	< 0.015	0.15	0.034	< 0.033	< 0.010	0.034	0.37	0.024	4.0	< 2.0 [#15]	51	5.8	6.3
	18-Sep-2021	Grab	140	< 1.0	7.5	42	< 1.0	33	< 0.060	9.0	< 0.0040	0.91	7.5	0.10	120	< 1.0	19	290	120	---	200	53	**40** [#2]	< 0.015	0.18	0.040	< 0.033	< 0.010	0.040	0.25	0.0039	11	< 2.0 [#16]	28	7.5	6.0
	10-Aug-2022	Grab	110	< 1.0	7.9	38	< 1.0	34	< 0.060	9.9	< 0.0040	0.97	7.7	0.089	90	< 1.0	9.3	270	120	7.68	160	52	**40** [#2]	< 0.015	0.21	0.048	< 0.033	< 0.010	0.048	< 0.20	< 0.0020	0.50	< 2.0	15	4.6	3.9
	12-Mar-2023	Grab	95	< 1.0	10	27	< 1.0	25	< 0.060	9.0	< 0.0040	0.82	8.5	---	78	< 1.0	---	220	100	---	150	---	---	< 0.015	0.87	0.20	< 0.033	< 0.010	0.20	0.11	< 0.0020	0.44	---	---	2.2	2.2
	25-Jul-2023	Grab	140	< 1.0	11	47	< 1.0	34	< 0.060	10	< 0.0040	0.90	8.6	---	110	< 1.0	5.1	310	130	---	150	5.7	**6.8** [#2]	< 0.015	0.12	0.027	< 0.033	< 0.010	0.027	0.11	< 0.0020	9.9	---	10	3.3	3.8
	19-Aug-2023	Grab	120	< 1.0	9.5	50	< 1.0	34	< 0.060	10	0.0075	0.84	7.8	---	95	< 1.0	8.6	290	130	---	180	51	**42** [#2]	< 0.015	0.31	0.071	< 0.033	< 0.010	0.071	0.18	0.0061	5.0	---	< 10 [#6]	5	2.5
	24-Sep-2023	Grab	120	< 1.0	11	49	< 1.0	44	0.091	15	0.018	1.2	13	---	100	< 1.0	4.0	310	170	---	220	170	**46** [#2]	0.026	0.34	0.076	< 0.033	< 0.010	0.076	---	0.0037	9.4	---	15	3.1	3.0
	17-Mar-2024	Grab	110	< 1.0	11	34	< 1.0	35	< 0.060	12	< 0.0040	1.2	12	---	91	< 1.0	2.5	270	140	---	170	< 0.99	**2.1** [#2]	< 0.015	0.87	0.20	< 0.033	< 0.010	0.20	0.14	< 0.0020	6.9	---	< 10 [#6]	3.1	3.2
	19-Jul-2024	Grab	110	< 1.0	8.3	47	< 1.0	38	< 0.060	11	< 0.0040	0.91	8.5	---	91	< 1.0	9.0	290	140	7.78	180	220	**160** [#2]	< 0.015	0.40	0.090	< 0.033	< 0.010	0.090	0.22	0.030	2.7	---	12	3.8	3.0
	15-Aug-2024	Grab	120	< 1.0	8.7	46	< 1.0	33	< 0.060	10	< 0.0040	0.79	7.9	---	100	< 1.0	5.5	290	130	7.81	180	19	**11** [#2]	< 0.015	0.24	0.054	< 0.033	< 0.010	0.054	< 0.20	0.0030	6.1	---	17	2.7	2.5
	17-Sep-2024	Grab	110	< 1.0	8.8	44	< 1.0	31	< 0.060	10	< 0.0040	0.90	7.8	---	90	< 1.0	4.4	280	120	6.89	170	1.8	**3.2** [#2]	< 0.015	0.20	0.046	< 0.033	< 0.010	0.046 [#18]	< 0.20	< 0.0020	3.2	---	< 10 [#7]	2.5	2.1
AEMP-US-03 (Norman Wells Upstream)	09-Mar-2023	Grab	90	< 1.0	9.8	28	< 1.0	27	< 0.060	9.6	< 0.0040	0.86	9.0	---	74	< 1.0	---	220	110	---	130	---	---	< 0.015	0.90	0.20	< 0.033	< 0.010	0.20	0.093	< 0.0020	3.7	---	---	2	2.0
	17-Mar-2024	Grab	110	< 1.0	11	33	< 1.0	34	< 0.060	12	< 0.0040	1.2	11	---	91	< 1.0	2.2	270	130	---	160	< 1.0	**2.1** [#2]	< 0.015	0.87	0.20	< 0.033	< 0.010	0.20	0.13	0.0030	5.7	---	10	2.8	3.3
	19-Jul-2024	Grab	110	< 1.0	8.2	45	< 1.0	33	< 0.060	9.6	< 0.0040	1.0	7.8	---	88	< 1.0	9.4	280	120	7.78	160	370 [#9]	**270** [#2]	< 0.015	0.42	0.094	< 0.033	< 0.010	0.094	< 0.20	0.033	2.3	---	13	3.8	2.9
	16-Aug-2024	Grab	120	< 1.0	8.7	44	< 1.0	33	< 0.060	10	0.021	0.76	7.9	---	96	< 1.0	6.4	290	120	7.60	170	480 [#9]	**190** [#2]	0.017	0.28	0.063	< 0.033	< 0.010	0.063	0.45	0.052	4.3	---	55	2.8	2.8
	12-Sep-2024	Grab	120	< 1.0	8.7	43	< 1.0	36	< 0.060	12	< 0.0040	0.97	8.6	---	100	< 1.0	< 2.0	290	140	7.29	160 [#14]	1.1	**5.2** [#2]	< 0.015	0.21	0.047	< 0.033	< 0.010	0.047	0.97	< 0.0020	0.013	---	65	2.7	3.1
BOSWORTH CREEK																																				
Bosworth Upstream Data UCL			---	---	**27**	**180**	---	**87**	**0.348**	**34**	---	---	---	---	---	---	---	---	---	---	**497**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Bosworth Upstream Data LCL			---	---	**9**	**110**	---	**63**	**<0.060**	**23**	---	---	---	---	---	---	---	---	---	---	**339**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
DOWNSTREAM																																				
AEMP-DS-01 (Lower Bosworth Creek)	18-Aug-2017	Grab	230	< 0.50	24	140	< 0.50	76	< 0.060	28	0.0077	1.1	23	---	190	< 0.50	---	650	310	---	400	4.0	---	---	0.054	0.012	< 0.033	< 0.010	< 0.014	---	---	1.5	< 2.0 [#3]	---	3.3	4.0
	16-Sep-2017	Grab	220	< 0.50	19	130	< 0.50	80	< 0.060	29	0.0081	1.0	18	---	180	< 0.50	---	630	320	---	390	2.7	---	---	0.15	0.033	< 0.033	< 0.010	0.033	---	0.0030	2.7	< 2.0 [#4]	---	5.1	4.2
(Duplicate)	16-Sep-2017	Grab	220	< 0.50	19	130	< 0.50	79	< 0.060	29	0.0078	0.96	18	---	180	< 0.50	---	630	320	---	380	1.3	---	---	0.15	0.033	< 0.033	< 0.010	0.033	---	0.0020	2.9	< 2.0 [#4]	---	4.3	3.7
	16-Oct-2017	Grab	220	< 1.0	20	150	< 1.0	75	< 0.060	30	0.0091	0.97	19	---	180	< 1.0	---	650	310	---	420	21	---	---	0.26	0.059	< 0.033	< 0.010	0.059	---	< 0.0020	0.47	< 2.0	---	3.8	4.0
	23-Jun-2018	Grab	230	< 1.0	19	130	< 1.0	78	< 0.060	28	0.0058	1.1	17	---	180	< 1.0	---	620	310	---	400	2.0	**1.3** [#2]	0.019	0.17	0.038	< 0.033	< 0.010	0.038	0.21	< 0.0020	0.36	---	13	4.8	4.3
	12-Aug-2018	Grab	220	< 1.0	14	140	< 1.0	74	< 0.060	29	0.0079	1.0	16	---	180	< 1.0	---	610	300	---	400	3.3	---	0.018	0.068	0.015	< 0.033	< 0.010	0.015	0.23	0.0030	1.0	---	19	3.8	4.2
	15-Aug-2018	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.086	0.019	< 0.033	< 0.010	0.019	---	---	---	< 2.0	---	---	---
	16-Oct-2018	Grab	230	< 1.0	17	160	< 1.0	78	< 0.060	31	0.0046	1.0	18	---	190	< 1.0	---	660	320	---	410	19	**1.5** [#2]	< 0.015	0.17	0.038	< 0.033	< 0.010	0.038	0.17	< 0.0020	2.2	---	13	2.7	2.9
	17-Oct-2018	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.5 [#4]	---	---	---
	03-Jun-2019	Grab	190	< 1.0	17	120	< 1.0	65	< 0.060	24	0.0050	0.85	14	---	160	< 1.0	16	560	260	8.21	350	4.7	**3.7** [#2]	< 0.015	0.18	0.041	< 0.033	< 0.010	0.041	0.21	< 0.0020	2.9	< 2.0	15	5.2	4.7
(Duplicate)	03-Jun-2019	Grab	190	< 1.0	17	120	< 1.0	65	< 0.060	24	0.0049	0.84	14	---	160	< 1.0	18	560	260	8.18	360	4.0	**4.1** [#2]	< 0.015	0.19	0.042	< 0.033	< 0.010	0.042	0.21	< 0.0020	2.4	< 2.0	20	5.0	4.9
	28-Aug-2019	Grab	230	< 1.0	17	140	< 1.0	76	< 0.060	27	0.0069	0.96	16	---	190	< 1.0	15	630	300	8.29	400	3.3	**2.0** [#2]	0.028	0.18	0.040	< 0.033	< 0.010	0.040	0.24	< 0.0020	2.9	< 2.0	< 10	5.6	4.5
	02-Oct-2019	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 2.0	---	---	---
	03-Oct-2019	Grab	230	< 1.0	19	160	< 1.0	83	< 0.060	32	0.0069	1.0	19	---	190	< 1.0	7.0	670	340	---	430	3.3	**2.0** [#2]	0.022	0.27	0.060	< 0.033	< 0.010	0.060	0.19	0.0020	0.53	---	20	3.1	2.9
	10-Jun-2020	Grab	210	< 1.0	16	130	< 1.0	70	< 0.060	24	0.0043	0.96	14	---	180	< 1.0	15	600	270	8.25	**320**	7.5	**2.1** [#2]	0.021	0.22	0.049	< 0.033	< 0.010	0.049	0.25	0.0099	4.4	< 2.0	< 10	5.2	4.4

Table 2

Surface Water Analytical Results: Indicator Analysis Parameters

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Anions					Cations							General										Inorganic Nitrogen Compounds							Inorganic Sulphur Compounds	Ion Balance	Miscellaneous			
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Fluoride (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Colour (color unit)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	pH (pH Units)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Ammonia (Total; as N) (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Sulphide (asH2S) (mg/L)	Ion Balance % Difference (%)	Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	120	---	---	---	0.3	---	---	---	---	0.12	---	---	---	---	---	(6.5 - 9)	---	---	---	8.5	---	2.9	---	0.06	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			---	---	---	---	---	None required	---	---	0.12	---	---	1.5	---	---	---	---	---	---	---	---	1	None required	45	10	3	1	---	---	---	---	---	---	---	---
	24-Jul-2020	Grab	220	< 1.0	25	140	< 1.0	81	0.062	29	0.0075	1.0	22	---	180	< 1.0	11	710	320	8.29	470	1.0	0.43	< 0.015	0.14	0.032	< 0.033	< 0.010	0.032	0.20	0.0034	0.83	< 2.0	10	3.3	3.0
	18-Sep-2020	Grab	220	< 1.0	21	160	< 1.0	80	< 0.060	31	0.0062	0.97	19	---	180	< 1.0	6.0	690	330	8.25	490	3.6	0.64	< 0.015	0.10	0.022	< 0.033	< 0.010	0.022	0.15	0.0072	1.4	< 2.0	< 10	2.8	2.5
	06-Jun-2021	Grab	240	1.5	17	110	< 1.0	72	< 0.060	26	0.0063	1.0	15	0.20 [#1]	200	1.3	23	610	290	---	430	9.1	3.1 [#2]	< 0.015	0.14	0.031	< 0.033	< 0.010	0.031	0.45	0.0043	3.3	< 2.0 [#4]	16	5.2	6.4
	18-Aug-2021	Grab	220	< 1.0	30	160	< 1.0	83	< 0.060	32	0.0058	1.2	28	0.23 [#1]	180	< 1.0	6.4	720	340	---	510	< 1.0	0.48	< 0.015	< 0.044	< 0.010	< 0.033	< 0.010	< 0.010	0.23	< 0.0020	2.0	< 2.0	13	3.0	2.7
	19-Sep-2021	Grab	250	< 1.0	38	190	< 1.0	83	< 0.060	32	0.0072	1.1	31	0.26 [#1]	200	< 1.0	3.7	780	340	8.27	490	1.8	0.69	0.022	0.24	0.055	< 0.033	< 0.010	0.055	0.12	< 0.0020	5.0	< 2.0	13	2.1	2.0
	11-Jun-2022	Grab	200	< 1.0	18	110	< 1.0	69	< 0.060	26	0.0076	1.2	16	0.17 [#1]	170	< 1.0	12	580	280	8.22	370	< 1.0	1.7 [#2]	< 0.015	0.11	0.026	< 0.033	< 0.010	0.026	0.29	< 0.0020	0.87	< 2.0	16	4.5	3.9
	06-Aug-2022	Grab	220	< 1.0	28	150	< 1.0	79	< 0.060	29	0.0061	1.2	24	0.20 [#1]	180	< 1.0	6.4	680	310	8.28	430	4.7	1.5 [#2]	< 0.015	0.21	0.048	< 0.033	< 0.010	0.048	0.19	< 0.0020	0.083	< 2.0 [#5]	24	3.4	2.7
	26-Sep-2022	Grab	230	< 1.0	30	150	< 1.0	78	< 0.060	30	0.0055	1.0	24	0.22 [#1]	190	< 1.0	5.5	720	320	7.91	460	1.2	1.1 [#2]	< 0.015	0.23	0.053	< 0.033	< 0.010	0.053	0.16	< 0.0020	1.7	< 2.0 [#3]	16	3.0	2.6
	26-Jul-2023	Grab	250	< 1.0	28	160	< 1.0	83	< 0.060	30	0.0063	1.2	27	---	200	< 1.0	7.3	720	330	8.32	450	2.9	< 0.10	< 0.015	0.24	0.054	< 0.033	< 0.010	0.054	0.093	0.0058	1.8	---	< 10 [#6]	3.2	2.4
	18-Aug-2023	Grab	240	< 1.0	34	170	< 1.0	81	< 0.060	30	0.0073	1.2	29	---	200	< 1.0	8.0	740	330	---	470	4.5	2.4 [#2]	< 0.015	0.18	0.041	< 0.033	< 0.010	0.041	0.095	0.0090	3.8	---	14	2.2	1.9
(Duplicate)	18-Aug-2023	Grab	240	< 1.0	34	160	< 1.0	81	< 0.060	30	0.0075	1.2	29	---	200	< 1.0	3.1	730	330	---	470	< 0.99	1.2 [#2]	< 0.015	0.21	0.047	< 0.033	< 0.010	0.047	0.076	0.0046	3.0	---	< 10 [#6]	2.2	2.2
	25-Sep-2023	Grab	240	< 1.0	29	170	< 1.0	0.33	< 0.060	< 0.20	< 0.0040	< 0.30	< 0.50	---	200	< 1.0	5.0	710	0.80	---	400	< 1.0	< 0.10	< 0.015	0.21	0.048	< 0.033	< 0.010	0.048	0.088	0.018	NC	---	18	< 0.50	2.0
(Duplicate)	25-Sep-2023	Grab	230	< 1.0	31	170	< 1.0	< 1.5	< 0.30	< 1.0	< 0.020	< 1.5	< 2.5	---	190	< 1.0	< 2.0	730	< 0.50	---	530	< 1.0	< 0.10	< 0.015	0.26	0.059	< 0.033	< 0.010	0.059	---	0.026	NC	---	20	< 0.50	2.2
	18-Jul-2024	Grab	210	1.7	33	170	< 1.0	82	< 0.060	31	< 0.0040	1.3	28	---	180	1.4	5.7	750	330	8.34	460	3.1	1.6 [#2]	< 0.015	0.44	0.099	< 0.033	< 0.010	0.099	0.13	0.0057	0.59	---	< 10 [#6]	2.5	1.7
	16-Aug-2024	Grab	220	2.7	38	180	< 1.0	87	< 0.060	34	0.0072	1.3	34	---	190	2.2	7.2	800	360	8.36	500	< 1.0	0.32	< 0.015	0.23	0.051	< 0.033	< 0.010	0.051	0.11	0.012	0.24	---	11	2.4	2.3
	13-Sep-2024	Grab	250	< 1.0	37	180	< 1.0	85	< 0.060	33	0.0069	1.2	33	---	210	< 1.0	4.4	800	350	8.25	490	< 1.0	< 0.10	< 0.015	0.12	0.028	< 0.033	< 0.010	0.028	0.12	0.011	2.6	---	< 10 [#7]	2.9	2.3
(Duplicate)	13-Sep-2024	Grab	230	< 1.0	39	180	< 1.0	84	< 0.060	33	0.0069	1.2	33	---	190	< 1.0	4.2	800	350	7.92	490	< 1.0	< 0.10	< 0.015	0.18	0.040	< 0.033	< 0.010	0.040	0.21	0.0084	1.3	---	< 10 [#7]	1.8	2.1
UPSTREAM																																				
AEMP-US-04 (Upper Bosworth Creek)	26-Jul-2023	Grab	240	< 1.0	29	160	< 1.0	78	< 0.060	29	< 0.0040	1.2	25	---	190	< 1.0	7.7	720	320	---	460	1.4	0.78	< 0.015	0.22	0.049	< 0.033	< 0.010	0.049	0.088	< 0.0020	3.4	---	17	2.9	2.4
	18-Aug-2023	Grab	240	< 1.0	34	160	< 1.0	81	< 0.060	30	0.0062	1.1	27	---	200	< 1.0	5.6	740	330	---	480	1.3	0.58	< 0.015	0.22	0.049	< 0.033	< 0.010	0.049	0.082	< 0.0020	3.7	---	11	2.3	2.1
	24-Sep-2023	Grab	240	< 1.0	30	170	< 1.0	83	< 0.060	33	0.0052	1.2	27	---	200	< 1.0	2.1	720	340	---	380	< 1.0	< 0.10	< 0.015	0.21	0.048	< 0.033	< 0.010	0.048	0.16	< 0.0020	0.81	---	19	2.2	1.6
	18-Jul-2024	Grab	210	1.7	33	170	< 1.0	81	< 0.060	32	< 0.0040	1.3	27	---	180	1.4	6.3	740	330	8.34	460	4.1	2.9 [#2]	< 0.015	0.33	0.074	< 0.033	< 0.010	0.074	0.098	< 0.0020	0.47	---	11	3.2	2.4
	16-Aug-2024	Grab	220	3.9	38	180	< 1.0	86	< 0.060	32	0.0058	1.2	33	---	190	3.3	4.2	790	350	8.35	510	3.5	0.85	< 0.015	0.19	0.042	< 0.033	< 0.010	0.042	0.20	< 0.0020	1.2	---	< 10 [#7]	1.8	2.0
	13-Sep-2024	Grab	230	< 1.0	39	170	< 1.0	93	< 0.060	36	0.0057	1.3	34	---	190	< 1.0	3.5	800	380	7.91	500	30	2.0 [#2]	< 0.015	0.20	0.045	< 0.033	< 0.010	0.045	0.25	< 0.0020	3.3	---	< 10 [#7]	2.5	1.9
AEMP-US-05	19-Jul-2024	Grab	210	2.2	33	170	< 1.0	80	< 0.060	31	0.0045	1.2	27	---	180	1.8	8.0	740	330	8.34	460	1.9	1.5 [#2]	< 0.015	0.33	0.074	< 0.033	< 0.010	0.074	0.099	< 0.0020	1.3	---	< 10 [#6]	2.8	2.2
	16-Aug-2024	Grab	220	1.7	38	180	< 1.0	87	< 0.060	34	0.0056	1.3	33	---	180	1.4	2.3	790	360	8.32	500	1.3	0.31	< 0.015	0.22	0.050	< 0.033	< 0.010	0.050	0.17	< 0.0020	0.087	---	< 10 [#7]	3.3	2.2
	12-Sep-2024	Grab	250	< 1.0	36	180	< 1.0	91	< 0.060	36	0.0053	1.2	33	---	200	< 1.0	9.5	800	370	8.28	400	< 1.0	1.2 [#2]	< 0.015	0.18	0.041	< 0.033	< 0.010	0.041	0.14	< 0.0020	1.0	---	< 10 [#7]	2.2	2.0
Relative Percent Difference (RPD) Report																																				
AEMP-DS-02 (Marine Dock)	20-Jul-2024	Grab	120	< 1.0	10	57	< 1.0	36	< 0.060	11	< 0.0040	0.89	8.5	---	96	< 1.0	5.8	330	130	7.95	180	110	120 [#2]	< 0.015	0.40	0.089	< 0.033	< 0.010	0.089	< 0.20	0.021	5.6	---	12	3.2	3.0
(Duplicate)	20-Jul-2024	Grab	130	< 1.0	9.8	56	< 1.0	36	< 0.060	11	< 0.0040	0.96	8.6	---	100	< 1.0	5.4	320	130	7.34	190	100	110 [#2]	< 0.015	0.37	0.083	< 0.033	< 0.010	0.083	< 0.20	0.020	6.6	---	28	3.3	2.9
RPD(%)			**8.0%**	**---**	**2.0%**	**1.8%**	**---**	**0.0%**	**---**	**0.0%**	**---**	**7.6%**	**1.2%**	**---**	**4.1%**	**---**	**7.1%**	**3.1%**	**0.0%**	**8.0%**	**5.4%**	**9.5%**	**8.7%**	**---**	**7.8%**	**7.0%**	**---**	**---**	**7.0%**	**---**	**4.9%**	**16.4%**	**---**	**80.0%**	**3.1%**	**3.4%**
AEMP-DS-02 (Marine Dock)	16-Aug-2024	Grab	150	< 1.0	15	73	< 1.0	49	< 0.060	17	0.040	1.0	15	---	120	< 1.0	6.4	400	190	7.92	240	460 [#9]	150 [#2]	0.016	0.19	0.043	< 0.033	< 0.010	0.043	0.23	0.020	1.6	---	31	3.0	2.7
(Duplicate)	16-Aug-2024	Grab	140	< 1.0	16	73	< 1.0	48	< 0.060	16	0.039	1.0	15	---	120	< 1.0	8.6	420	190	8.14	250	450 [#9]	150 [#2]	< 0.015	0.25	0.056	< 0.033	< 0.010	0.056	0.37	0.018	1.3	---	37	2.8	3.1
RPD(%)			**6.9%**	**---**	**6.5%**	**0.0%**	**---**	**2.1%**	**---**	**6.1%**	**2.5%**	**0.0%**	**0.0%**	**---**	**0.0%**	**---**	**29.3%**	**4.9%**	**0.0%**	**2.7%**	**4.1%**	**2.2%**	**0.0%**	**---**	**27.3%**	**26.3%**	**---**	**---**	**26.3%**	**46.7%**	**10.5%**	**20.7%**	**---**	**17.6%**	**6.9%**	**13.8%**
AEMP-DS-04 (Refinery)	18-Mar-2024	Grab	100	< 1.0	14	35	< 1.0	29	< 0.060	9.5	< 0.0040	0.93	9.5	---	86	< 1.0	2.6	270	110	8.02	160	< 1.0	1.5 [#2]	< 0.015	0.90	0.20	< 0.033	< 0.010	0.20	0.097	< 0.0020	2.8	---	15	3.0	2.8
(Duplicate)	18-Mar-2024	Grab	100	< 1.0	14	35	< 1.0	29	< 0.060	9.5	< 0.0040	0.99	9.6	---	85	< 1.0	4.3	270	110	8.00	160	< 1.0	1.8 [#2]	< 0.015	0.84	0.19	< 0.033	< 0.010	0.19	0.12	< 0.0020	2.9	---	< 10 [#12]	3.2	2.8
RPD(%)			**0.0%**	**---**	**0.0%**	**0.0%**	**---**	**0.0%**	**---**	**0.0%**	**---**	**6.2%**	**1.0%**	**---**	**1.2%**	**---**	**49.3%**	**0.0%**	**0.0%**	**0.2%**	**0.0%**	**---**	**18.2%**	**---**	**6.9%**	**5.1%**	**---**	**---**	**5.1%**	**21.2%**	**---**	**3.5%**	**---**	**---**	**6.5%**	**0.0%**
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	Grab	250	< 1.0	37	180	< 1.0	85	< 0.060	33	0.0069	1.2	33	---	210	< 1.0	4.4	800	350	8.25	490	< 1.0	< 0.10	< 0.015	0.12	0.028	< 0.033	< 0.010	0.028	0.12	0.011	2.6	---	< 10 [#7]	2.9	2.3
(Duplicate)	13-Sep-2024	Grab	230	< 1.0	39	180	< 1.0	84	< 0.060	33	0.0069	1.2	33	---	190	< 1.0	4.2	800	350	7.92	490	< 1.0	< 0.10	< 0.015	0.18	0.040	< 0.033	< 0.010	0.040	0.21	0.0084	1.3	---	< 10 [#7]	1.8	2.1
RPD(%)			**8.3%**	**---**	**5.3%**	**0.0%**	**---**	**1.2%**	**---**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**---**	**10.0%**	**---**	**4.7%**	**0.0%**	**0.0%**	**4.1%**	**0.0%**	**---**	**---**	**---**	**40.0%**	**35.3%**	**---**	**---**	**35.3%**	**54.5%**	**26.8%**	**66.7%**	**---**	**---**	**46.8%**	**9.1%**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1]denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life.

Table 2

Surface Water Analytical Results: Indicator Analysis Parameters

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Anions					Cations							General										Inorganic Nitrogen Compounds							Inorganic Sulphur Compounds	Ion Balance	Miscellaneous			
			Bicarbonate (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Sulphate (mg/L)	Hydroxide (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Fluoride (mg/L)	Alkalinity (Total; as $CaCO_3$) (mg/L)	Alkalinity (PP; as $CaCO_3$) (mg/L)	Colour (color unit)	Electrical Conductivity (uS/cm)	Hardness (Total; as $CaCO_3$) (mg/L)	pH (pH Units)	Total Dissolved Solids (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Ammonia (Total; as N) (mg/L)	Nitrate (mg/L)	Nitrate (as N) (mg/L)	Nitrite (mg/L)	Nitrite (as N) (mg/L)	Nitrite-plus-Nitrate (as N) (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Sulphide (asH2S) (mg/L)	Ion Balance % Difference (%)	Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Dissolved Organic Carbon (mg/L)	Total Organic Carbon (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	120	---	---	---	0.3	---	---	---	---	0.12	---	---	---	---	---	---	(6.5 - 9)	---	---	---	8.5	---	2.9	---	0.06	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			---	---	---	---	---	None required	---	---	0.12	---	---	1.5	---	---	---	---	---	---	---	---	---	1	None required	45	10	3	1	---	---	---	---	---	---	---	---

http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)

Chloride:
Guideline based on chronic exposure

Ammonia (Total; as N):
Guideline for total ammonia is dependent on pH and temperature of surface water. Guideline based on Temperature of 10oC and pH of 7

Nitrate (as N):
Guideline based on long term exposure

Nitrite (as N):
Standard is for NO_2 as N, equivalent standard for NO_2 is 0.197 mg/L.

7. Superscript [#2]denotes values exceeding
(Health Canada. 2024. Guidelines for Canadian Drinking Water Quality. Summary Table. Maximum Acceptable Concentration. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. August 2024.)

Calcium:
Guideline value not necessary. Calcium contributes to hardness.

Turbidity:
Not specifically an MAC, rather a treatment limit guideline value specific groundwater not under direct influence of surface water. Groundwater that is not under the direct influence of surface water are considered less vulnerable to faecal contamination (HC 2012). A less stringent value for turbidity may be acceptable if it is demonstrated that t

Ammonia (Total; as N):
Guideline value not necessary. No adverse effects at levels found in drinking water. To help prevent nitrification, limit excess free ammonia entering the distribution system to below 0.1 mg/L and preferably below 0.05 mg/L as N.

8. Value above UCL
9. Value equal to UCL
10. Value below LCL
11. Value equal to LCL
12. Superscript [#3] - Sample analyzed past hold time. Sample analysis is recommended within 48 hours of sampling.
13. Superscript [#4] - Method blank exceeds 0.2 mg/L stipulated in Reference Method. No other Quality Control measures affected.
14. Superscript [#5] - Method blank exceeds 0.2 mg/L stipulated in Reference Method. No other Quality Control measures affected
15. Superscript [#6] - COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.
16. Superscript [#7] - COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.
17. Superscript [#8] - Sample was past hold time when received.
18. Superscript [#9] - Detection limit raised based on sample volume used for analysis.
19. Superscript [#10] - Detection limits raised due to sample matrix.
20. Superscript [#11] - Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.
21. Superscript [#12] - COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.
22. Superscript [#13] - Sample incubation time was outside method specifications. This may increase the uncertainty associated with these results.
23. Superscript [#14] - Sample was originally processed within hold time. Data quality required investigation. Re-analysis was completed past recommended hold time.
24. Superscript [#15] - Method blank exceeds 0.2 mg/L stipulated in Reference Method. No other Quality Control measures affected.Sample analyzed past hold time. Sample analysis is recommended within 48 hours of sampling.
25. Superscript [#16] - Sample analyzed past hold time. Sample analysis is recommended within 48 hours of sampling. Method blank exceeds 0.2 mg/L stipulated in Reference Method. No other Quality Control measures affected.
26. Superscript [#17] - Detection limits raised due to dilution to bring analyte within the calibrated range.
27. Superscript [#18] - Detection limits raised due to matrix interference.
28. Superscript [#19] - Matrix spike exceeds acceptance limits due to matrix interference.
29. Superscript [#20] - Sample filtered and preserved past method specified hold time

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	**---**	**---**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	**---**	**---**	**0.07**	**---**	**---**	**---**	**---**	**---**	**---**
NW AEMP V5														
MACKENZIE RIVER														
Mackenzie Upstream Data UCL			N/C	N/C	N/C	---	---	N/C	---	---	---	---	---	---
Mackenzie Upstream Data LCL			N/C	N/C	N/C	---	---	N/C	---	---	---	---	---	---
DOWNSTREAM														
AEMP-DS-02 (Marine Dock)	17-Aug-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	21-Aug-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	16-Sep-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	16-Oct-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	23-Jun-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	6.0
	13-Aug-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Oct-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	03-Jun-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	28-Aug-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	03-Oct-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	12
	10-Jun-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	24-Jul-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Sep-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	06-Jun-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	18-Aug-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	17-Sep-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	31-Mar-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Jun-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	06-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	25-Sep-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	09-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	5.0
	25-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	24-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	20-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
(Duplicate)	20-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	16-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	---	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	---	---	**0.09**	---	---	---	---	---	---
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	---	---	**0.07**	---	---	---	---	---	---
(Duplicate)	16-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	13-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-DS-03 (Island 3)	16-Sep-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	16-Oct-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	23-Jun-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	14-Aug-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Oct-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	10-Jun-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	26-Aug-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	01-Oct-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Jun-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	28-Jul-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	22-Sep-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	07-Jun-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	07-Jun-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	19-Aug-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Sep-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	31-Mar-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	14-Jun-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	6.0
	06-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
(Duplicate)	06-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	5.0
	25-Sep-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	7.0
	09-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	25-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	3.0
	19-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	0.23	< 0.20	< 2.0
	25-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	4.0
	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	15-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-DS-04 (Refinery)	21-Aug-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	21-Aug-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	16-Sep-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	**---**	**---**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	**---**	**---**	**0.07**	**---**	**---**	**---**	**---**	**---**	**---**
	16-Oct-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	23-Jun-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	10
	13-Aug-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Oct-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	17-Oct-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	03-Jun-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	25-Aug-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	03-Oct-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	10-Jun-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	24-Jul-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	24-Jul-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Sep-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
(Duplicate)	18-Sep-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	06-Jun-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	18-Aug-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	17-Sep-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Jun-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	06-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
(Duplicate)	06-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	24-Sep-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	5.0
(Duplicate)	24-Sep-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	7.0
	11-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	26-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
(Duplicate)	26-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	0.33	< 0.20	< 2.0
	24-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	6.0
(Duplicate)	18-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	7.0
	20-Jul-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	16-Aug-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	13-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-DS-05 (Radar)	23-Jun-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	8.0
	14-Aug-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	**---**	**---**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	**---**	**---**	**0.07**	**---**	**---**	**---**	**---**	**---**	**---**
	18-Oct-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	10-Jun-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	26-Aug-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 3.8 [#3]
	01-Oct-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Jun-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	28-Jul-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	22-Sep-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	07-Jun-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	19-Aug-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	19-Aug-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Sep-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	10-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	11-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	25-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	19-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	26-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	3.0
	17-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	5.0
	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	15-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-DS-06 (Fort Good Hope)	10-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	10-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	24-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	21-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	03-Oct-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	15-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	8.0
	17-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	14-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Sep-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-DS-07	17-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	14-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 4.4 [#3]
	18-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	**---**	**---**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	**---**	**---**	**0.07**	**---**	**---**	**---**	**---**	**---**	**---**
AEMP-DS-08	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	15-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-DS-09	17-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	3.0
	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	15-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
UPSTREAM														
AEMP-US-01 (Midway)	12-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	25-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	19-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	26-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	16-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	6.0
	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	15-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-US-02 (10 mile)	23-Jun-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	9.0
	14-Aug-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	14-Aug-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Oct-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	10-Jun-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	26-Aug-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 3.6 [#3]
	01-Oct-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Jun-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	28-Jul-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	22-Sep-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	07-Jun-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	19-Aug-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Sep-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	10-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	12-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	25-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	---	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	---	---	**0.09**	---	---	---	---	---	---
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	---	---	**0.07**	---	---	---	---	---	---
	19-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	24-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	17-Mar-2024	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	14
	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	15-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	17-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-US-03 (Norman Wells Upstream)	09-Mar-2023	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	4.0
	17-Mar-2024	Grab	0.00051	**0.0027** [#1]	0.00090	0.0038	0.0019	0.0057	< 0.10	< 0.10	< 0.10	---	---	13
	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	16-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
BOSWORTH CREEK														
Bosworth Upstream Data UCL			N/C	N/C	N/C	---	---	N/C	---	---	---	---	---	---
Bosworth Upstream Data LCL			N/C	N/C	N/C	---	---	N/C	---	---	---	---	---	---
DOWNSTREAM														
AEMP-DS-01 (Lower Bosworth Creek)	18-Aug-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	16-Sep-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	---
(Duplicate)	16-Sep-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	16-Oct-2017	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00080	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	23-Jun-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Aug-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	16-Oct-2018	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	2.0
	03-Jun-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
(Duplicate)	03-Jun-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	28-Aug-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	03-Oct-2019	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	2.0
	10-Jun-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	6.0
	24-Jul-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	18-Sep-2020	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	06-Jun-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	18-Aug-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	3.0
	19-Sep-2021	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	**---**	**---**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	**---**	**---**	**0.07**	**---**	**---**	**---**	**---**	**---**	**---**
	11-Jun-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	06-Aug-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	8.0
	26-Sep-2022	Grab	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	7.0
	26-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
(Duplicate)	18-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	25-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
(Duplicate)	25-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	16-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	13-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	13-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
UPSTREAM														
AEMP-US-04 (Upper Bosworth Creek)	26-Jul-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Aug-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	24-Sep-2023	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 2.0
	18-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	16-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	13-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
AEMP-US-05	19-Jul-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
	16-Aug-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
	12-Sep-2024	PDB	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
Relative Percent Difference (RPD) Report														
AEMP-DS-02 (Marine Dock)	20-Jul-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
(Duplicate)	20-Jul-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	---
RPD(%)			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
AEMP-DS-02 (Marine Dock)	16-Aug-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	16-Aug-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
RPD(%)			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**

Table 3

Surface Water Analytical Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)	Oil and Grease (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.37**	**0.002**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**0.005**	**0.06**	**0.14**	**---**	**---**	**0.09**	**---**	**---**	**---**	**---**	**---**	**---**
Federal Environmental Quality Guidelines [#4]			**0.59**	**0.03**	**0.07**	**---**	**---**	**0.07**	**---**	**---**	**---**	**---**	**---**	**---**
AEMP-DS-04 (Refinery)	18-Mar-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	6.0
(Duplicate)	18-Mar-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	7.0
RPD(%)			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**15.4%**
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
(Duplicate)	13-Sep-2024		< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---	< 2.0
RPD(%)			**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1] denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)
7. Superscript [#2] denotes values exceeding
   (Health Canada. 2024. Guidelines for Canadian Drinking Water Quality. Summary Table. Maximum Acceptable Concentration. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. August 2024.)
8. Superscript [#3] - Detection limit raised based on sample volume used for analysis.

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			0.1	---	0.005	---	---	1.5	0.00017	---	0.0089	---	0.00257	0.3	0.00359	---	---	0.37	0.000026	0.073	0.1028	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.019
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			0.1	---	0.005	---	---	1.5	0.00037	---	0.0089	---	0.004	0.3	0.007	---	---	0.29	0.000026	0.073	0.1500	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.039
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			2.9	0.006	0.01	2	---	5	0.007	None required	0.05	---	2	---	0.005	---	---	0.12	0.001	---	---	---	---	0.05	---	---	---	7	---	---	---	0.02	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			0.76	---	---	---	---	---	---	---	0.005	0.0011	---	0.33	0.0059	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			0.72	---	---	---	---	---	---	---	0.005	0.0017	---	0.29	0.0075	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
NW AEMP V5																																		
MACKENZIE RIVER																																		
Mackenzie Upstream Data UCL			3.39	---	0.0025	0.107	---	---	0.00016	---	0.0055	---	0.0067	5.2	---	---	---	---	---	0.0017	0.009	---	---	0.00067	---	---	---	---	---	---	---	0.0012	---	0.0260
Mackenzie Upstream Data LCL			<0.003	---	<0.0002	0.022	---	---	<0.00002	---	<0.0010	---	<0.0010	<0.060	---	---	---	---	---	0.0004	<0.0005	---	---	<0.00020	---	---	---	---	---	---	---	0.0004	---	<0.003
DOWNSTREAM																																		
AEMP-DS-02 (Marine Dock)	17-Aug-2017	Grab	0.65 [#1]	< 0.00060	0.0011	0.066	< 0.0010	< 0.020	0.000071	39	0.0011	0.00079	0.0025	1.2 [#1,7]	0.00077	< 0.020	12	0.031	0.0000038	0.0012	0.0037	< 0.10	1.1	0.00052	2.6	< 0.00010	7.3	0.25	< 0.00020	< 0.0010	0.011	0.00094	0.0032	0.011
	21-Aug-2017	Grab	0.50 [#1]	< 0.00060	0.00079	0.056	< 0.0010	< 0.020	0.000035	33	< 0.0010	0.00056	0.0020	0.98 [#1,7]	0.00054	< 0.020	10	0.024	0.0000026	0.00095	0.0027	< 0.10	1.1	0.00031	2.2	< 0.00010	8.3	0.24	< 0.00020	< 0.0010	0.011	0.00072	0.0019	0.0057
	16-Sep-2017	Grab	1.2 [#1,7]	< 0.00060	0.0015	0.085	< 0.0010	< 0.020	0.000092	39	0.0022	0.0016 [#7]	0.0037 [#1]	3.2 [#1,7]	0.0017	< 0.020	14	0.077	0.0000026	0.00095	0.0051	< 0.10	1.2	0.00026	3.0	< 0.00010	9.4	0.24	< 0.00020	< 0.0010	0.016	0.00074	0.0043	0.016
	16-Oct-2017	Grab	0.33 [#1]	< 0.00060	0.00056	0.048	< 0.0010	< 0.020	0.000029	31	< 0.0010	0.00039	0.0013	0.74 [#1,7]	0.00040	< 0.020	11	0.020	< 0.0000020	0.00077	0.0020	< 0.10	0.99	0.00033	2.1	< 0.00010	9.2	0.23	< 0.00020	< 0.0010	0.0069	0.00060	0.0026	0.0040
	23-Jun-2018	Grab	0.80 [#1,7]	< 0.00060	0.00098	0.063	< 0.0010	< 0.020	0.000066	31	0.0014	0.0011 [#7]	0.0031 [#1]	1.6 [#1,7]	0.00089	< 0.020	9.5	0.038	0.0000030	0.0011	0.0043	< 0.10	1.0	0.00028	2.3	< 0.00010	7.3	0.20	< 0.00020	< 0.0010	0.010	0.00073	0.0026	0.011
	13-Aug-2018	Grab	0.73 [#1]	< 0.00060	0.00083	0.057	< 0.0010	< 0.020	0.000087	35	< 0.0010	0.00072	0.0023	1.1 [#1,7]	0.00060	< 0.020	11	0.028	0.0000039	0.0010	0.0034	< 0.10	1.0	0.00034	2.6	< 0.00010	9.2	0.26	< 0.00020	< 0.0010	0.015	0.00074	0.0021	0.011
	17-Oct-2018	Grab	0.12 [#1]	< 0.00060	0.00029	0.041	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.00095	0.19	< 0.00020	< 0.020	10	0.0069	< 0.0000020	0.00075	0.0012	< 0.10	0.94	< 0.00020	1.6	< 0.00010	9.4	0.28	< 0.00020	< 0.0010	0.0020	0.00052	< 0.0010	< 0.0030
	03-Jun-2019	Grab	1.7 [#1,7]	< 0.00060	0.0017	0.086	< 0.0010	< 0.020	0.00012	37	0.0031	0.0021 [#7]	0.0048 [#1]	4.0 [#1,7]	0.0021	< 0.020	13	0.092	0.0000080	0.0012	0.0065	< 0.10	1.4	0.00039	3.7	< 0.00010	7.9	0.31	< 0.00020	< 0.0010	0.019	0.00076	0.0046	0.021 [#1]
	28-Aug-2019	Grab	0.59 [#1]	< 0.00060	0.00052	0.056	< 0.0010	< 0.020	0.000023	35	< 0.0010	0.00037	0.0015	0.86 [#1,7]	0.00042	< 0.020	11	0.018	< 0.0000020	0.00091	0.0018	< 0.10	1.1	0.00032	2.9	< 0.00010	8.8	0.29	< 0.00020	< 0.0010	0.015 [#3]	0.00069	0.0024	0.0044
	03-Oct-2019	Grab	0.38 [#1]	< 0.00060	0.00064	0.054	< 0.0010	< 0.020	0.000031	33	< 0.0010	0.00039	0.0015	0.87 [#1,7]	0.00041	< 0.020	10	0.015	0.0000020	0.00092	0.0023	< 0.10	1.1	0.00037	3.1	< 0.00010	8.9	0.27	< 0.00020	< 0.0010	0.0074	0.00060	0.0018	0.0051
	10-Jun-2020	Grab	3.7 [#1,2,7]	< 0.00060	0.0032	0.14	< 0.0010	< 0.020	0.00023 [#1]	35	0.0058 [#7]	0.003 [#7]	0.0074 [#1]	6.8 [#1,7]	0.0036 [#1]	< 0.020	10	0.13 [#2]	< 0.000019 [#4]	0.0013	0.0096	0.15	2.4	0.00043	13	< 0.00010	6.0	0.20	< 0.00020	< 0.0010	0.086	0.00092	0.011	0.030 [#1]
	24-Jul-2020	Grab	1.9 [#1,7]	< 0.00060	0.0013	0.074	< 0.0010	< 0.020	0.000063	34	0.0030	0.0013 [#7]	0.0035 [#1]	2.4 [#1,7]	0.0012 [#1]	< 0.020	9.9	0.047	< 0.000019 [#4]	0.00095	0.0040	0.10	1.1	0.00031	3.2	< 0.00010	6.7	0.20	< 0.00020	< 0.0010	0.044	0.00075	0.0051	0.012
	18-Sep-2020	Grab	0.58 [#1]	< 0.00060	0.00085	0.061	< 0.0010	< 0.020	0.000047	34	0.0012	0.00055	0.0037 [#1]	1.1 [#1,7]	0.00053	< 0.020	9.2	0.025	< 0.0000019	0.00094	0.0062	< 0.10	1.1	0.00029	3.7	< 0.00010	7.7	0.19	< 0.00020	0.0018	0.014	0.00087	0.0019	0.0060
	06-Jun-2021	Grab	3.4 [#1,2,7]	< 0.00060	0.0021	0.074	< 0.0010	< 0.020	0.00010	33	0.0057 [#7]	0.0016 [#7]	0.0041 [#1]	3.2 [#1,7]	0.0017 [#1]	< 0.020	9.5	0.065	0.0000053	0.0011	0.0059	< 0.10	1.6	0.00038	4.1	< 0.00010	6.7	0.17	< 0.00020	< 0.0010	0.15	0.00068	0.0086	0.018
	18-Aug-2021	Grab	4.4 [#1,2,7]	< 0.00060	0.0037	0.13	< 0.0010	< 0.020	0.00021 [#1]	39	0.0069 [#7]	0.0043 [#7]	0.010 [#1]	8.5 [#1,7]	0.0043 [#1]	< 0.020	13	0.15 [#2]	0.000013	0.0015	0.013	0.17	2.3	0.00049	6.9	< 0.00010	7.5	0.23	< 0.00020	< 0.0010	0.044	0.0010	0.013	0.095 [#1]
	17-Sep-2021	Grab	0.46 [#1]	< 0.00060	0.00061	0.049	< 0.0010	< 0.020	0.000030	33	0.0011	0.00042	0.0016	0.85 [#1,7]	0.00040	< 0.020	9.9	0.021	< 0.0000019	0.00086	0.0020	< 0.10	1.0	0.00030	2.6	< 0.00010	7.5	0.21	< 0.00020	< 0.0010	0.0083	0.00061	0.0019	< 0.0030
	31-Mar-2022	Grab	0.027	< 0.00060	0.00026	0.034	< 0.0010	< 0.020	0.000038	36	< 0.0010	< 0.00030	0.0021	0.061	0.0051 [#1,2]	< 0.020	10	0.0055	0.0000032	0.00055	0.0011	0.16	1.0	< 0.00020	1.6	< 0.00010	9.5	0.22	< 0.00020	< 0.0010	< 0.0010	0.00036	< 0.0010	0.023 [#1]
	12-Jun-2022	Grab	3.3 [#1,2,7]	< 0.00060	0.0036	0.13	< 0.0010	< 0.020	0.00027 [#1]	43	0.0057 [#7]	0.0040 [#7]	0.0095 [#1]	9.0 [#1,7]	0.0040 [#1]	< 0.020	11	0.16 [#2]	0.000023	0.0027	0.014	0.19	2.0	0.00073	6.1	< 0.00010	5.3	0.20	< 0.00020	< 0.0010	0.039	0.0011	0.010	0.10 [#1]
	06-Aug-2022	Grab	1.7 [#1,7]	< 0.00060	0.0019	0.11	< 0.0010	< 0.020	0.00014	39	0.0025	0.0018 [#7]	0.0048 [#1]	4.2 [#1,7]	0.0022	< 0.020	12	0.090	< 0.0000019	0.0012	0.0060	< 0.10	1.9	0.00036	7.1	< 0.00010	8.4	0.26	< 0.00020	< 0.0010	0.027	0.00077	0.0050	0.074 [#1]
	25-Sep-2022	Grab	0.49 [#1]	< 0.00060	0.00073	0.056	< 0.0010	< 0.020	0.000042	33	< 0.0010	< 0.00030	0.0020	1.0 [#1,7]	0.00054	< 0.020	11	0.024	< 0.0000019	0.00095	0.0023	< 0.10	1.2	0.00022	2.5	< 0.00010	8.7	0.22	< 0.00020	< 0.0010	0.014	0.00063	0.0021	0.0062
	09-Mar-2023	Grab	0.038	< 0.00060	0.00023	0.036	< 0.0010	< 0.020	0.000033	26	0.0011	< 0.00030	0.0013	< 0.060	0.00029	< 0.020	9.1	< 0.0040	< 0.0000019	0.00057	0.0012	< 0.10	0.85	< 0.00020	1.6	< 0.00010	8.8	0.21	< 0.00020	0.0013	< 0.0010	0.00047	0.0017	0.0042
	25-Jul-2023	Grab	0.61 [#1]	< 0.00060	0.00076	0.057	< 0.0010	< 0.020	0.000050	35	0.0011	0.00045	0.0020	0.59 [#1,7]	0.00045	< 0.020	10	0.017	< 0.0000019	0.0014	0.0023	< 0.10	1.0	0.00045	2.6	< 0.00010	8.9	0.25	< 0.00020	< 0.0010	0.014	0.0011	0.0020	0.0054
	18-Aug-2023	Grab	1.7 [#1,7]	< 0.00060	0.0012	0.081	< 0.0010	0.039	0.000089	36	0.0028	0.00097	0.0030 [#1]	2.1 [#1,7]	0.0011	< 0.020	11	0.042	0.0000044	0.0012	0.0042	< 0.10	1.5	0.00042	6.7	< 0.00010	8.4	0.24	< 0.00020	< 0.0010	0.051	0.00084	0.0053	0.012
	24-Sep-2023	Grab	0.16 [#1]	< 0.00060	0.00035	0.046	< 0.0010	< 0.020	< 0.000020	33	< 0.0010	< 0.00030	0.0011	0.23	< 0.00020	< 0.020	11	0.0099	< 0.0000019	0.00094	0.0011	< 0.10	0.92	0.00031	1.6	< 0.00010	9.1	0.26	< 0.00020	< 0.0010	0.0024	0.00069	< 0.0010	< 0.0030
	18-Mar-2024	Grab	0.024	< 0.00060	0.00029	0.042	< 0.0010	< 0.020	< 0.000020	30	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	9.7	< 0.0040	< 0.0000019	0.00088	0.0016	< 0.10	0.95	0.00023	1.7	< 0.00010	9.9	0.23	< 0.00020	< 0.0010	< 0.0010	0.00071	< 0.0010	0.0067
	20-Jul-2024	Grab	1.8 [#1,7]	< 0.00060	0.0020	0.086	< 0.0010	0.022	0.000093	39	0.0030	0.0018 [#7]	0.0043 [#1]	3.3 [#1,7]	0.0020	< 0.026	12	0.055	0.0000068 [#4]	0.0010	0.0071	< 0.10	1.5	0.00037	3.3	< 0.00010	8.8	0.32	< 0.00020	< 0.0010	0.018	0.00091	0.0057	0.035 [#1]
(Duplicate)	20-Jul-2024	Grab	1.8 [#1,7]	< 0.00060	0.0018	0.086	< 0.0010	0.022	0.00010	39	0.0029	0.0017 [#7]	0.0043 [#1]	3.4 [#1,7]	0.0018	< 0.026	12	0.054	0.0000057 [#4]	0.0012	0.0076	< 0.10	1.6	0.00035	3.4	< 0.00010	8.9	0.33	< 0.00020	< 0.0010	0.018	0.00093	0.0058	0.040 [#1]
	16-Aug-2024	Grab	3.4 [#1,2,7]	< 0.00060	0.0031	0.17	< 0.0010	0.025	0.00022 [#1]	61	0.0049	0.0035 [#7]	0.0074 [#1]	7.7 [#1,7]	0.0043 [#1]	< 0.020	21	0.18 [#2]	0.000013	0.0017	0.011	0.20	1.9	0.00047	5.7	< 0.00010	14	0.61	< 0.00020	< 0.0010	0.036	0.0012	0.0088	0.058 [#1]
(Duplicate)	16-Aug-2024	Grab	3.6 [#1,2,7]	< 0.00060	0.0032	0.16	< 0.0010	0.025	0.00024 [#1]	60	0.0051 [#7]	0.0035 [#7]	0.0076 [#1]	7.4 [#1,7]	0.0041 [#1]	< 0.020	21	0.18 [#2]	0.000014	0.0017	0.011	0.20	2.0	0.00044	5.6	< 0.00010	14	0.58	< 0.00020	< 0.0010	0.035	0.0012	0.0092	0.089 [#1]
	13-Sep-2024	Grab	0.16 [#1]	< 0.00060	0.00044	0.048	< 0.0010	< 0.020	0.000044	35	< 0.0010	< 0.00030	0.0013	0.16	< 0.00020	< 0.020	12	0.0066	< 0.0000019	0.0011	0.0019	< 0.10	0.96	0.00032	1.5	< 0.00010	9.4	0.30	< 0.00020	< 0.0010	0.0020	0.00087	< 0.0010	0.0051
AEMP-DS-03 (Island 3)	16-Sep-2017	Grab	0.52 [#1]	< 0.00060	0.00065	0.061	< 0.0010	< 0.020	0.000040	38	0.0010	0.00054	0.0020	0.88 [#1,7]	0.00048	< 0.020	11	0.022	< 0.0000020	0.0011	0.0029	< 0.10	1.1	0.00034	2.4	< 0.00010	9.4	0.23	< 0.00020	< 0.0010	0.0082	0.00083	0.0026	0.023 [#1]
	16-Oct-2017	Grab	0.33 [#1]	< 0.00060	0.00050	0.053	< 0.0010	< 0.020	0.000050	37	< 0.0010	0.00034	0.0017	0.50 [#1,7]	0.00034	< 0.020	11	0.015	< 0.0000020	0.0011	0.0026	< 0.10	1.1	0.00039	2.1	< 0.00010	9.1	0.24	< 0.00020	< 0.0010	0.0083	0.00080	0.0020	0.0045
	23-Jun-2018	Grab	1.5 [#1,7]	< 0.00060	0.0015	0.073	< 0.0010	< 0.020	0.00015	37	0.0028	0.0025 [#7]	0.0055 [#1]	2.3 [#1,7]	0.0016	< 0.020	11	0.054	0.0000049	0.0016	0.0086	< 0.10	1.2	0.00060	2.9	< 0.00010	6.4	0.17	< 0.00020	< 0.0010	0.018	0.0011	0.0040	0.026 [#1]
	14-Aug-2018	Grab	2.1 [#1,7]	< 0.00060	0.0016	0.099	< 0.0010	< 0.020	0.00042 [#1]	51	0.0022	0.0033 [#7]	0.0064 [#1]	3.3 [#1,7]	0.0023	< 0.020	15	0.13 [#2]	0.000010	0.0010	0.011	0.17	1.3	0.00048	4.3	< 0.00010	7.5	0.27	< 0.00020	< 0.0010	0.024	0.0011	0.0054	0.056 [#1]
	18-Oct-2018	Grab	0.45 [#1]	< 0.00060	0.00070	0.059	< 0.0010	< 0.020	0.000065	32	< 0.0010	0.00053	0.0021	1.0 [#1,7]	0.00063	< 0.020	10	0.028	0.0000047	0.00076	0.0025	< 0.10	1.1	0.00030	2.1	< 0.00010	9.4	0.22	< 0.00020	< 0.0010	0.0079	0.00057	0.0016	0.0070
	10-Jun-2019	Grab	2.1 [#1,7]	0.00094	0.0023	0.10	< 0.0010	< 0.020	0.00015	39	0.0038	0.0024 [#7]	0.0078 [#1]	5.0 [#1,7]	0.0026	< 0.020	11	0.11	0.0000089	0.0013	0.0087	0.11	1.6	0.00045	4.2	< 0.00010	6.3	0.19	< 0.00020	< 0.0010	0.028	0.00086	0.0059	0.045 [#1]
	26-Aug-2019	Grab	1.9 [#1,7]	< 0.00060	0.0011	0.077	< 0.0010	< 0.020	0.000084	42	0.0028	0.0012 [#7]	0.0034 [#1]	2.2 [#1,7]	0.0010	< 0.020	12	0.040	0.0000033	0.0011	0.0049	< 0.10	1.5	0.00062	5.5	< 0.00010	8.3	0.27	< 0.00020	< 0.0010	0.086	0.0011	0.0055	0.013
	01-Oct-2019	Grab	2.0 [#1,7]	< 0.00060	0.0017	0.11	< 0.0010	< 0.020	0.00012	39	0.0037	0.0015 [#7]	0.0050 [#1]	3.4 [#1,7]	0.0018	< 0.020	12	0.047	0.0000074	0.0014	0.0066	< 0.10	1.5	0.00061	3.3	< 0.00010	9.2	0.25	< 0.00020	< 0.0010	0.037	0.00097	0.0060	0.017
	12-Jun-2020	Grab	5.3 [#1,2,7]	< 0.00060	0.0050 [#1]	0.19	< 0.0010	< 0.020	0.00036 [#1]	51	0.0089 [#1,7]	0.0060 [#7]	0.013 [#1]	12 [#1,7]	0.0061 [#1,2,7]	< 0.020	15	0.22 [#2]	0.000021 [#4]	0.0018	0.020	0.24	2.3	0.00066	8.8	< 0.00010	5.2	0.24	< 0.00020	< 0.0010	0.045	0.0012	0.014	0.078 [#1]
	28-Jul-2020	Grab	1.7 [#1,7]	< 0.00060	0.0020	0.11	< 0.0010	< 0.020	0.00020 [#1]	44	0.0074 [#7]	0.0021 [#7]	0.0060 [#1]	3.6 [#1,7]	0.0021	< 0.020	12	0.086	0.000020 [#4]	0.0013	0.0079	< 0.10	1.1	0.00062	3.7	< 0.00010	6.0	0.21	< 0.00020	< 0.0010	0.029	0.00098	0.0056	0.025 [#1]
	22-Sep-2020	Grab	0.86 [#1,7]	0.0019	0.00092	0.061	< 0.0010	< 0.020	0.000074	40	0.0012	0.00065	0.0026 [#1]	1.3 [#1,7]	0.00066	< 0.020	11	0.029	0.000026 [#1,4]	0.0011	0.0044	< 0.10	1.2	0.00036	3.3	< 0.00010	7.3	0.21	< 0.00020	< 0.0010	0.019	0.00090	0.0042	0.0076
	07-Jun-2021	Grab	3.4 [#1,2,7]	< 0.00060	0.0022	0.10	< 0.0010	< 0.020	0.00019 [#1]	39	0.0059 [#7]	0.0022 [#7]	0.0059 [#1]	3.8 [#1,7]	0.0022	< 0.020	11	0.088	0.0000048	0.0012	0.0089	0.11	1.6	0.00051	3.9	< 0.00010	6.2	0.18	< 0.00020	< 0.0010	0.084	0.00098	0.0091	0.029 [#1]
(Duplicate)	07-Jun-2021	Grab	3.7 [#1,2,7]	< 0.00060	0.0021	0.098	< 0.0010	< 0.020	0.00014	37	0.0067 [#7]	0.0020 [#7]	0.0061 [#1]	3.3 [#1,7]	0.0021	< 0.020	10	0.075	< 0.0000019	0.0011	0.0084	< 0.10	1.5	0.00054	3.7	< 0.00010	6.2	0.18	< 0.00020	< 0.0010	0.091	0.00092	0.0087	0.026 [#1]
	19-Aug-2021	Grab	3.9 [#1,2,7]	< 0.00060	0.0032	0.14	< 0.0010	0.022	0.00023 [#1]	46	0.0062 [#7]	0.0039 [#7]	0.0091 [#1]	8.5 [#1,7]	0.0035	< 0.020	14	0.16 [#2]	0.0000042	0.0014	0.013	0.17	2.1	0.00046	6.4	< 0.00010	6.6	0.23	< 0.00020	< 0.0010	0.041	0.00094	0.010	0.083 [#1]
	18-Sep-2021	Grab	1.2 [#1,7]	0.00063	0.0015	0.071	< 0.0010	< 0.020	0.00013	38	0.0028	0.0013 [#7]	0.0041 [#1]	2.4 [#1,7]	0.0013	< 0.020	11	0.048	0.0000031	0.0012	0.0060	< 0.10	1.3	0.00043	3.4	< 0.00010	7.5	0.22	< 0.00020	< 0.0010	0.018	0.00091	0.0042	0.092 [#1]
	31-Mar-2022	Grab	0.10 [#1]	< 0.00060	0.00047	0.059	< 0.0010	< 0.020	0.000024	42	< 0.0010	< 0.00030	0.0023	0.67 [#1,7]	< 0.00020	< 0.020	12	0.012	0.0000022	0.0011	0.0015	< 0.10	1.3	0.00037	2.9	< 0.00010	12	0.27	< 0.00020	< 0.0010	0.0020	0.00081	< 0.0010	< 0.0030
	14-Jun-2022	Grab	7.9 [#1,2,7]	< 0.00060	0.0068 [#1]	0.24	< 0.0010	< 0.020	0.00050 [#1]	55	0.013 [#1,7]	0.0087 [#7]	0.019 [#1]	16 [#1,7]	0.0082 [#1,2,7]	< 0.020	16	0.34 [#2]	0.000034 [#1]	0.0018	0.026	0.33	2.4	0.00081	9.0	< 0.00010	4.0	0.20	< 0.00020	< 0.0010	0.14	0.0013	0.024	0.087 [#1]
	06-Aug-2022	Grab	0.97 [#1,7]	< 0.00060	0.0012	0.085	< 0.0010	< 0.020	0.000074	41	0.0018	0.00097	0.0033 [#1]	2.3 [#1,7]	0.0011	< 0.020	12	0.051	0.0000068	0.0012	0.0041	< 0.10	1.6	0.00046	5.3	< 0.00010	7.6	0.23	< 0.00020	< 0.0010	0.014	0.00081	0.0029	0.080 [#1]
(Duplicate)	06-Aug-2022	Grab	0.95 [#1,7]	< 0.00060	0.0012	0.086	< 0.0010	< 0.020	0.000089	41	0.0015	0.00094	0.0031 [#1]	2.3 [#1,7]	0.0011	< 0.020	12	0.050	0.0000055	0.0012	0.0041	< 0.10	1.6	0.00046	5.7	< 0.00010	7.7	0.23	< 0.00020	< 0.0010	0.016	0.00084	0.0030	0.064 [#1]

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			0.1	---	0.005	---	---	1.5	0.00017	---	0.0089	---	0.00257	0.3	0.00359	---	---	0.37	0.000026	0.073	0.1028	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.019
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			0.1	---	0.005	---	---	1.5	0.00037	---	0.0089	---	0.004	0.3	0.007	---	---	0.29	0.000026	0.073	0.1500	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.039
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			2.9	0.006	0.01	2	---	5	0.007	None required	0.05	---	2	---	0.005	---	---	0.12	0.001	---	---	---	---	0.05	---	---	---	7	---	---	---	0.02	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			0.76	---	---	---	---	---	---	---	0.005	0.0011	---	0.33	0.0059	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			0.72	---	---	---	---	---	---	---	0.005	0.0017	---	0.29	0.0075	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
	25-Sep-2022	Grab	**0.46** [#1]	< 0.00060	0.00067	0.057	< 0.0010	< 0.020	0.000047	39	< 0.0010	< 0.00030	0.0022	**0.71** [#1,7]	0.00045	< 0.020	9.9	0.020	< 0.0000019	0.0011	0.0025	< 0.10	1.2	0.00040	3.0	< 0.00010	8.9	0.22	< 0.00020	< 0.0010	0.011	0.00076	0.0015	0.0050
	09-Mar-2023	Grab	**0.17** [#1]	< 0.00060	0.00091	0.069	< 0.0010	< 0.020	0.000097	45	**0.040** [#1,7]	0.00055	**0.0036** [#1]	**0.47** [#1,7]	0.00063	< 0.020	12	0.011	< 0.0000019	**0.0027**	**0.022**	< 0.10	1.2	**0.00067**	2.5	< 0.00010	14	0.32	< 0.00020	< 0.0010	0.0026	**0.0013**	< 0.0010	0.0090
	25-Jul-2023	Grab	**0.88** [#1,7]	< 0.00060	0.00080	0.064	< 0.0010	< 0.020	0.000054	41	0.0013	0.00051	0.0020	**1.0** [#1,7]	0.00054	< 0.020	12	0.026	< 0.0000019	0.0011	0.0026	< 0.10	1.2	0.00046	3.5	< 0.00010	8.0	0.24	< 0.00020	< 0.0010	0.024	0.00092	0.0020	0.0072
	19-Aug-2023	Grab	**2.0** [#1,7]	< 0.00060	0.0013	0.087	< 0.0010	< 0.020	0.00010	44	0.0027	0.0010	**0.0037** [#1]	**2.2** [#1,7]	0.0012	< 0.020	12	0.045	0.000012	0.0013	0.0046	< 0.10	1.5	0.00056	5.0	< 0.00010	8.1	0.25	< 0.00020	< 0.0010	0.079	0.0011	0.0052	0.016
	25-Sep-2023	Grab	**0.23** [#1]	< 0.00060	0.00031	0.059	< 0.0010	< 0.020	0.000038	42	< 0.0010	< 0.00030	0.0013	**0.32** [#1]	< 0.00020	< 0.020	13	0.011	< 0.0000019	0.0011	0.0017	< 0.10	1.0	0.00040	2.2	< 0.00010	9.9	0.28	< 0.00020	< 0.0010	0.0031	0.00087	< 0.0010	< 0.0030
	18-Mar-2024	Grab	0.059	< 0.00060	0.00036	0.064	< 0.0010	< 0.020	0.000023	45	< 0.0010	< 0.00030	0.0016	0.078	< 0.00020	< 0.020	12	< 0.0040	< 0.0000019	0.0013	0.0018	< 0.10	1.2	0.00047	2.3	< 0.00010	15	0.33	< 0.00020	< 0.0010	0.0027	0.0011	< 0.0010	0.0045
	19-Jul-2024	Grab	**4.8** [#1,2,7]	< 0.00060	**0.0049**	**0.15**	< 0.0010	0.023	**0.00027** [#1]	47	**0.0077** [#7]	**0.0051** [#7]	**0.010** [#1]	**9.9** [#1,7]	**0.0050** [#1,2]	< 0.026	14	**0.16** [#2]	< 0.0000019	0.0016	**0.017**	0.18	2.2	0.00065	6.4	< 0.00010	6.9	0.26	< 0.00020	< 0.0010	0.041	**0.0012**	0.014	**0.066** [#1]
	15-Aug-2024	Grab	**1.7** [#1,7]	< 0.00060	0.0011	0.089	< 0.0010	0.021	0.000085	45	0.0023	**0.0012** [#7]	**0.0031** [#1]	**2.1** [#1,7]	0.0013	< 0.020	13	0.046	< 0.0000019	0.0013	0.0046	< 0.10	1.7	0.00054	6.0	< 0.00010	8.5	0.27	< 0.00020	< 0.0010	0.035	0.0011	0.0042	0.012
	17-Sep-2024	Grab	**0.80** [#1,7]	< 0.00060	0.00079	0.071	< 0.0010	0.025	0.00011	47	0.0011	0.00076	**0.0026** [#1]	**0.95** [#1,7]	0.00055	< 0.020	13	0.026	< 0.0000019	0.0013	0.0048	< 0.10	1.3	0.00048	3.3	< 0.00010	9.4	0.30	< 0.00020	< 0.0010	0.020	0.0011	0.0032	0.014
AEMP-DS-04 (Refinery)	21-Aug-2017	Grab	**0.62** [#1]	< 0.00060	0.00083	0.058	< 0.0010	< 0.020	0.000060	33	0.0011	0.00069	0.0023	**1.2** [#1,7]	0.00063	< 0.020	10	0.029	0.0000024	0.00097	0.0030	< 0.10	1.1	0.00034	2.4	< 0.00010	8.1	0.23	< 0.00020	< 0.0010	0.0089	0.00074	0.0022	0.0082
(Duplicate)	21-Aug-2017	Grab	**0.67** [#1]	< 0.00060	0.00093	0.059	< 0.0010	< 0.020	0.000053	33	0.0013	0.00077	0.0025	**1.3** [#1,7]	0.00074	< 0.020	11	0.031	0.0000026	0.0010	0.0032	< 0.10	1.1	0.00038	2.4	< 0.00010	8.2	0.23	< 0.00020	< 0.0010	0.011	0.00079	0.0024	0.0078
	16-Sep-2017	Grab	**0.28** [#1]	< 0.00060	0.00056	0.047	< 0.0010	< 0.020	0.000028	30	< 0.0010	0.00034	0.0013	**0.67** [#1,7]	0.00039	< 0.020	10	0.018	< 0.0000020	0.00076	0.0018	< 0.10	0.89	< 0.00020	1.9	< 0.00010	9.0	0.20	< 0.00020	< 0.0010	0.0038	0.00057	0.0017	0.0042
	16-Oct-2017	Grab	**0.54** [#1]	< 0.00060	0.00086	0.056	< 0.0010	< 0.020	0.000057	29	0.0010	0.00050	0.0020	**0.80** [#1,7]	0.00058	< 0.020	10	0.048	< 0.0000020	0.00095	0.0026	< 0.10	1.1	0.00028	1.9	< 0.00010	8.8	0.22	< 0.00020	< 0.0010	0.023	0.00075	0.0038	0.0064
	23-Jun-2018	Grab	**1.1** [#1,7]	< 0.00060	0.0013	0.060	< 0.0010	< 0.020	0.000098	29	0.0022	**0.0015** [#7]	**0.0042** [#1]	**1.6** [#1,7]	0.0014	< 0.020	8.9	0.038	0.0000033	0.0014	0.0059	< 0.10	1.1	0.00042	2.4	< 0.00010	7.2	0.16	< 0.00020	< 0.0010	0.017	0.00094	0.0040	0.014
	13-Aug-2018	Grab	**1.4** [#1,7]	< 0.00060	0.0018	0.093	< 0.0010	< 0.020	**0.00017** [#1]	39	0.0019	**0.0017** [#7]	**0.0044** [#1]	**3.0** [#1,7]	0.0019	< 0.020	12	0.079	0.000010	0.00098	0.0060	0.12	1.2	0.00040	3.2	< 0.00010	9.0	0.23	< 0.00020	< 0.0010	0.019	0.00081	0.0043	**0.021** [#1]
	17-Oct-2018	Grab	**0.34** [#1]	< 0.00060	0.00060	0.052	< 0.0010	< 0.020	0.000040	28	< 0.0010	0.00042	0.0018	**0.66** [#1,7]	0.00047	< 0.020	9.1	0.024	< 0.0000020	0.00091	0.0020	< 0.10	1.0	< 0.00020	2.1	< 0.00010	9.5	0.21	< 0.00020	< 0.0010	0.013	0.00059	< 0.0010	0.0039
(Duplicate)	17-Oct-2018	Grab	**0.34** [#1]	< 0.00060	0.00046	0.053	< 0.0010	< 0.020	0.000038	28	< 0.0010	0.00040	0.0015	**0.72** [#1,7]	0.00047	< 0.020	9.2	0.026	< 0.0000020	0.00078	0.0020	< 0.10	1.0	< 0.00020	2.2	< 0.00010	9.7	0.21	< 0.00020	< 0.0010	0.0069	0.00054	< 0.0010	0.0038
	03-Jun-2019	Grab	**3.5** [#1,2,7]	< 0.00060	**0.0028**	**0.11**	< 0.0010	< 0.020	0.00015	37	**0.0062** [#7]	**0.0036** [#7]	**0.0083** [#1]	**7.5** [#1,7]	0.0034	< 0.020	12	**0.15** [#2]	0.000013	0.0014	**0.012**	0.15	1.9	0.00031	5.5	< 0.00010	9.8	0.20	< 0.00020	< 0.0010	0.12	0.00088	0.0096	**0.035** [#1]
	25-Aug-2019	Grab	**0.81** [#1,7]	< 0.00060	0.00061	0.051	< 0.0010	< 0.020	0.000028	31	0.0011	0.00047	0.0017	**0.89** [#1,7]	0.00046	< 0.020	9.9	0.018	< 0.0000020	0.00082	0.0024	< 0.10	1.1	0.00035	3.0	< 0.00010	8.3	0.22	< 0.00020	< 0.0010	0.013	0.00065	0.0017	0.0060
	03-Oct-2019	Grab	**4.6** [#1,2,7]	< 0.00060	**0.0062** [#1]	**0.34**	< 0.0010	0.021	**0.00048** [#1]	70	**0.0093** [#1,7]	**0.0069** [#7]	**0.014** [#1]	**16** [#1,7]	**0.0077** [#1,2,7]	< 0.020	24	**0.36** [#2]	0.000021	**0.0019**	**0.021**	0.51	2.2	0.00063	9.0	< 0.00010	8.6	0.27	< 0.00020	< 0.0010	0.059	**0.0012**	0.015	**0.072** [#1]
	10-Jun-2020	Grab	**4.3** [#1,2,7]	< 0.00060	**0.0034**	**0.13**	< 0.0010	< 0.020	**0.00024** [#1]	35	**0.0070** [#7]	**0.0034** [#7]	**0.0081** [#1]	**7.1** [#1,7]	**0.0040** [#1]	< 0.020	11	**0.14** [#2]	0.000020 [#4]	0.0015	**0.011**	0.17	1.6	0.00050	5.0	< 0.00010	6.0	0.20	< 0.00020	< 0.0010	0.11	0.00092	0.013	**0.033** [#1]
	24-Jul-2020	Grab	**1.8** [#1,7]	< 0.00060	0.0014	0.073	< 0.0010	< 0.020	0.000087	34	0.0033	0.00092	**0.0036** [#1]	**2.6** [#1,7]	0.0015	< 0.020	9.7	0.051	< 0.000019 [#4]	0.00096	0.0047	< 0.10	1.1	0.00040	3.2	< 0.00010	6.5	0.19	< 0.00020	< 0.0010	0.038	0.00072	0.0056	0.0091
(Duplicate)	24-Jul-2020	Grab	**2.0** [#1,7]	< 0.00060	0.0013	0.075	< 0.0010	< 0.020	0.00012	34	0.0032	**0.0011** [#7]	**0.0034** [#1]	**2.6** [#1,7]	0.0014	< 0.020	10	0.051	< 0.000019 [#4]	0.0012	0.0049	< 0.10	1.1	0.00039	3.2	< 0.00010	6.6	0.20	< 0.00020	< 0.0010	0.039	0.00072	0.0048	0.0094
	18-Sep-2020	Grab	**0.60** [#1]	< 0.00060	0.00069	0.060	< 0.0010	< 0.020	0.000037	34	0.0012	0.00043	0.0023	**1.0** [#1,7]	0.00046	< 0.020	9.0	0.024	< 0.0000019	0.00075	0.0027	< 0.10	1.1	0.00027	3.0	< 0.00010	7.4	0.18	< 0.00020	0.0012	0.046	0.00063	0.0017	0.0053
(Duplicate)	18-Sep-2020	Grab	**0.53** [#1]	< 0.00060	0.00070	0.058	< 0.0010	< 0.020	0.000055	34	0.0013	0.00057	**0.0039** [#1]	**0.98** [#1,7]	0.00060	< 0.020	9.1	0.024	< 0.0000019	0.0010	0.0033	< 0.10	1.2	0.00023	2.7	< 0.00010	7.7	0.18	< 0.00020	0.0061	0.014	**0.0012**	0.0019	0.0056
	06-Jun-2021	Grab	**3.2** [#1,2,7]	< 0.00060	0.0021	0.079	< 0.0010	< 0.020	0.00011	33	**0.0057** [#7]	**0.0016** [#7]	**0.0045** [#1]	**3.5** [#1,7]	0.0017	< 0.020	9.6	0.069	0.0000060	0.00099	0.0064	< 0.10	1.6	0.00042	4.3	< 0.00010	6.6	0.17	< 0.00020	< 0.0010	0.082	0.00065	0.010	**0.020** [#1]
	18-Aug-2021	Grab	**4.5** [#1,2,7]	< 0.00060	**0.0037**	**0.13**	< 0.0010	< 0.020	**0.00020** [#1]	39	**0.0073** [#7]	**0.0042** [#7]	**0.010** [#1]	**8.5** [#1,7]	**0.0043** [#1]	< 0.020	12	**0.15** [#2]	0.000012	0.0016	**0.015**	0.17	2.3	0.00041	7.2	< 0.00010	7.3	0.22	< 0.00020	< 0.0010	0.041	0.0010	0.013	**0.088** [#1]
	17-Sep-2021	Grab	**0.63** [#1]	< 0.00060	0.00083	0.053	< 0.0010	< 0.020	0.000048	33	0.0014	0.00048	0.0022	**1.2** [#1,7]	0.00062	< 0.020	9.6	0.028	< 0.0000019	0.00087	0.0024	< 0.10	1.1	0.00030	3.0	< 0.00010	7.1	0.18	< 0.00020	< 0.0010	0.014	0.00068	0.0026	0.0040
	12-Jun-2022	Grab	**5.1** [#1,2,7]	< 0.00060	**0.0067** [#1]	**0.18**	< 0.0010	< 0.020	**0.00045** [#1]	44	**0.0091** [#1,7]	**0.0066** [#7]	**0.015** [#1]	**14** [#1,7]	**0.0069** [#1,2,7]	< 0.020	13	**0.25** [#2]	**0.000032** [#1]	**0.0068**	**0.023**	0.28	2.4	**0.00095**	8.0	< 0.00010	6.1	0.19	0.00030	< 0.0010	0.055	**0.0019**	0.017	**0.16** [#1]
	06-Aug-2022	Grab	**8.5** [#1,2,7]	< 0.00060	**0.0093** [#1]	**0.39**	< 0.0010	0.023	**0.00071** [#1]	75	**0.014** [#1,7]	**0.010** [#7]	**0.021** [#1]	**24** [#1,7]	**0.012** [#1,2,7]	< 0.020	23	**0.53** [#1,2]	< 0.0000019	**0.0025**	**0.030**	0.61	3.1	**0.00099**	12	0.00015	8.1	0.29	< 0.00020	< 0.0010	0.089	**0.0016**	0.026	**0.17** [#1]
(Duplicate)	06-Aug-2022	Grab	**7.7** [#1,2,7]	< 0.00060	**0.0083** [#1]	**0.37**	< 0.0010	0.022	**0.00066** [#1]	73	**0.013** [#1,7]	**0.0096** [#7]	**0.019** [#1]	**21** [#1,7]	**0.011** [#1,2,7]	< 0.020	22	**0.49** [#1,2]	< 0.0000019	**0.0023**	**0.028**	0.57	2.9	**0.00092**	11	0.00012	8.0	0.28	< 0.00020	< 0.0010	0.079	**0.0016**	0.023	**0.16** [#1]
	24-Sep-2022	Grab	**3.8** [#1,2,7]	< 0.00060	**0.0045**	**0.16**	< 0.0010	< 0.020	**0.00033** [#1]	45	**0.0070** [#7]	**0.0044** [#7]	**0.013** [#1]	**8.6** [#1,7]	**0.0050** [#1,2]	< 0.020	13	**0.22** [#2]	0.000020	0.0016	**0.014**	0.19	2.0	0.00057	5.9	< 0.00010	8.2	0.21	< 0.00020	< 0.0010	0.054	0.0011	0.012	**0.086** [#1]
(Duplicate)	24-Sep-2022	Grab	**3.8** [#1,2,7]	< 0.00060	**0.0046**	**0.17**	< 0.0010	0.021	**0.00035** [#1]	47	**0.0071** [#7]	**0.0047** [#7]	**0.014** [#1]	**8.9** [#1,7]	**0.0052** [#1,2]	< 0.020	14	**0.23** [#2]	**0.000029** [#1]	**0.0017**	**0.019**	0.21	2.0	0.00058	6.1	< 0.00010	8.4	0.22	< 0.00020	< 0.0010	0.053	0.0011	0.012	**0.081** [#1]
	11-Mar-2023	Grab	0.02	< 0.00060	0.00022	0.035	< 0.0010	0.025	0.000026	25	< 0.0010	< 0.00030	0.0018	< 0.060	< 0.00020	< 0.020	8.9	< 0.0040	< 0.0000019	0.00060	0.00071	< 0.10	0.79	0.00022	1.5	< 0.00010	8.3	0.22	< 0.00020	< 0.0010	< 0.0010	0.00044	< 0.0010	< 0.0030
	26-Jul-2023	Grab	**0.40** [#1]	< 0.00060	0.00063	0.054	< 0.0010	< 0.020	0.000031	36	< 0.0010	0.00030	0.0018	**0.55** [#1,7]	0.00031	< 0.020	10	0.017	< 0.0000019	0.0011	0.0016	< 0.10	1.0	0.00033	2.4	< 0.00010	8.4	0.22	< 0.00020	< 0.0010	0.0078	0.00076	0.0010	0.0047
(Duplicate)	26-Jul-2023	Grab	**0.45** [#1]	< 0.00060	0.00054	0.055	< 0.0010	< 0.020	0.000037	36	< 0.0010	0.00036	0.0014	**0.63** [#1,7]	0.00045	< 0.020	11	0.018	< 0.0000019	0.00099	0.0018	< 0.10	1.1	0.00032	2.5	< 0.00010	8.5	0.23	< 0.00020	< 0.0010	0.0063	0.00075	0.0011	0.0042
	18-Aug-2023	Grab	**1.9** [#1,7]	< 0.00060	0.0014	0.087	< 0.0010	< 0.020	0.000095	36	0.0031	**0.0011** [#7]	**0.0036** [#1]	**2.4** [#1,7]	0.0014	< 0.020	11	0.051	0.0000057	0.0012	0.0047	< 0.10	1.5	0.00045	5.6	< 0.00010	8.0	0.23	< 0.00020	< 0.0010	0.056	0.00090	0.0059	0.013
	24-Sep-2023	Grab	**0.30** [#1]	< 0.00060 [#5]	0.00044	0.055	< 0.0010	< 0.020	0.000032	33	< 0.0010	0.00034	0.0013	**0.55** [#1,7]	< 0.00020	< 0.020	10	0.015	< 0.0000019	0.00098	0.0016	< 0.10	1.1	0.00028	1.8	< 0.00010	8.9	0.23	< 0.00020	< 0.0010	0.0065	0.00075	< 0.0010	0.0041
	18-Mar-2024	Grab	0.023	< 0.00060	0.00037	0.042	< 0.0010	< 0.020	0.000025	30	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	9.6	< 0.0040	< 0.0000019	0.00084	0.0010	< 0.10	0.91	0.00021	1.8	< 0.00010	9.6	0.23	< 0.00020	< 0.0010	< 0.0010	0.00068	< 0.0010	0.0055
	20-Jul-2024	Grab	**1.2** [#1,7]	< 0.00060	0.0012	0.071	< 0.0010	< 0.020	0.000064	34	0.0018	**0.0011** [#7]	**0.0029** [#1]	**2.2** [#1,7]	0.0011	< 0.020	10	0.036	0.0000046	0.00099	0.0048	< 0.10	1.3	0.00035	2.9	< 0.00010	7.3	0.22	< 0.00020	< 0.0010	0.011	0.00084	0.0040	**0.030** [#1]
	16-Aug-2024	Grab	**3.0** [#1,2,7]	< 0.00060	**0.0029**	**0.16**	< 0.0010	< 0.020	**0.00021** [#1]	47	0.0043	**0.0031** [#7]	**0.0064** [#1]	**6.9** [#1,7]	0.0035	< 0.020	15	**0.16** [#2]	0.000020 [#4]	0.0015	**0.0096**	0.20	1.7	0.00048	5.1	< 0.00010	8.0	0.25	< 0.00020	< 0.0010	0.033	0.0010	0.0078	**0.056** [#1,3]
	13-Sep-2024	Grab	**0.19** [#1]	< 0.00060	0.00044	0.045	< 0.0010	< 0.020	0.000066	32	< 0.0010	< 0.00030	0.0015	0.12	0.00027	< 0.020	10	0.0052	< 0.0000019	0.0013	0.0024	< 0.10	0.92	0.00044	1.4	< 0.00010	8.0	0.22	< 0.00020	< 0.0010	0.0035	0.0010	< 0.0010	0.0053
AEMP-DS-05 (Radar North)	23-Jun-2018	Grab	**0.88** [#1,7]	< 0.00060	0.00099	0.066	< 0.0010	< 0.020	0.000085	32	0.0019	**0.0014** [#7]	**0.0036** [#1]	**1.7** [#1,7]	0.0010	< 0.020	9.3	0.042	0.0000036	0.00095	0.0049	< 0.10	1.1	0.00036	2.6	< 0.00010	6.6	0.16	< 0.00020	< 0.0010	0.018	0.00079	0.0028	0.011
	14-Aug-2018	Grab	**1.2** [#1,7]	< 0.00060	0.00086	0.065	< 0.0010	< 0.020	0.00013	37	0.0012	**0.0013** [#7]	**0.0029** [#1]	**1.5** [#1,7]	0.00097	< 0.020	11	0.043	0.0000043	0.00092	0.0044	< 0.10	1.2	0.00036	3.3	< 0.00010	7.6	0.22	< 0.00020	< 0.0010	0.017	0.00080	0.0031	0.016
	18-Oct-2018	Grab	**1.0** [#1,7]	< 0.00060	0.0011	0.071	< 0.0010	< 0.020	0.000071	32	0.0018	**0.0011** [#7]	**0.0031** [#1]	**2.1** [#1,7]	0.0012	< 0.020	11	0.049	0.0000038	0.00089	0.0040	< 0.10	1.2	0.00031	2.5	< 0.00010	9.9	0.27	< 0.00020	< 0.0010	0.016	0.00059	0.0035	0.012
	10-Jun-2019	Grab	**2.1** [#1,7]	0.00098	0.0023	0.10	< 0.0010	< 0.020	**0.00016** [#1]	38	0.0038	**0.0027** [#7]	**0.0079** [#1]	**5.4** [#1,7]	0.0028	< 0.020	11	**0.12** [#2]	0.0000092	0.0012	0.0086	0.13	1.6	0.00040	4.2	< 0.00010	6.4	0.18	< 0.00020	< 0.0010	0.032	0.00076	0.0063	**0.038** [#1]
	26-Aug-2019	Grab	**1.5** [#1,7]	< 0.00060	0.0010	0.074	< 0.0010	< 0.020	0.000063	39	0.0025	**0.0011** [#7]	**0.0031** [#1]	**2.1** [#1,7]	0.00098	< 0.020	11	0.039	0.0000036	0.0011	0.0046	< 0.10	1.4	0.00047	5.0	< 0.00010	8.0	0.24	< 0.00020	< 0.0010	0.043	0.0011	0.0050	0.0096
	01-Oct-2019	Grab	**1.6** [#1,7]	0.0015	0.0018	**0.11**	< 0.0010	0.023	0.00014	36	0.0028	**0.0025** [#7]	**0.0078** [#1]	**6.7** [#1,7]	0.0025	< 0.020	11	0.086	0.0000092	0.0014	**0.0090**	0.10	1.7	0.00048	3.9	< 0.00010	9.8	0.24	< 0.00020	< 0.0010	0.020	0.00098	0.0048	**0.044** [#1]
	12-Jun-2020	Grab	**8.1** [#1,2,7]	< 0.00060	**0.0081** [#1]	**0.33**	< 0.0010	< 0.020	**0.00062** [#1]	69	**0.014** [#1,7]	**0.0094** [#7]	**0.021** [#1]	**21** [#1,7]	**0.011** [#1,2,7]	< 0.020	21	**0.41** [#1,2]	< 0.000019 [#4]	**0.0025**	**0.031**	0.50	2.5	**0.00074**	12	0.00013	5.6	0.27	< 0.00020	< 0.0010	0.074	**0.0015**	0.023	**0.11** [#1]
	28-Jul-2020	Grab	**1.3** [#1,7]	< 0.00060	0.0014	0.072	< 0.0010	0.021	0.000097	36	0.0037	**0.0012** [#7]	**0.0045** [#1]	**2.3** [#1,7]	0.0012	< 0.020	9.8	0.049	< 0.000019 [#4]	0.0013	0.0061	< 0.10	1.1	0.00052	3.2	0.00014	6.1	0.18	< 0.00020	< 0.0010	0.017	0.00089	0.0048	0.012
	22-Sep-2020	Grab	**0.67** [#1]	0.0020	0.00094	0.058	< 0.0010	< 0.020	0.000056	36	< 0.0010	0.00063	0.0022	**1.2** [#1,7]	0.00067	< 0.020	9.7	0.031	0.0000022	0.00085	0.0032	< 0.10	1.1	0.00044	2.8	< 0.00010	7.0	0.18	< 0.00020	< 0.0010	0.017	0.00076	0.0033	0.0067
	07-Jun-2021	Grab	**2.2** [#1,7]	< 0.00060	0.0018	0.082	< 0.0010	< 0.020	0.00012	38	**0.0052** [#7]	**0.0016** [#7]	**0.0045** [#1]	**3.3** [#1,7]	0.0017	< 0.020	10	0.067	< 0.0000019	0.0011	0.0069	< 0.10	1.6	0.00041	4.0	< 0.00010	7.1	0.17	< 0.00020	< 0.0010	0.075	0.00095	0.0068	0.020
	19-Aug-2021	Grab	**2.9** [#1,2,7]	< 0.00060	**0.0026**	**0.13**	< 0.0010	0.030	**0.00019** [#1]	42	0.0046	**0.0030** [#7]	**0.0075** [#1]	**6.8** [#1,7]	0.0031	< 0.020	12	**0.13** [#2]	0.0000086	0.0013	**0.011**	0.15	2.0	0.00044	7.7 [#6]	< 0.00010	7.0	0.21	< 0.00020	< 0.0010	0.036	0.00088	0.0079	**0.080** [#1]
(Duplicate)	19-Aug-2021	Grab	**3.4** [#1,2]	< 0.00060	**0.0030**	**0.13**	< 0.0010	0.028	**0.00021** [#1]	43	**0.0052** [#7]	**0.0033** [#7]	**0.0084** [#1]	**7.3** [#1,7]	0.0034	< 0.020	12	**0.14** [#2]	0.0000095	0.0014	**0.011**	0.15	2.2	0.00054	8.2	< 0.00010	7.2	0.22	< 0.00020	< 0.0010	0.043	0.00094	0.0094	**0.12** [#1,3]

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00017**	---	**0.0089**	---	**0.00257**	**0.3**	**0.00359**	---	---	**0.37**	**0.000026**	**0.073**	**0.1028**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.019**
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00037**	---	**0.0089**	---	**0.004**	**0.3**	**0.007**	---	---	**0.29**	**0.000026**	**0.073**	**0.1500**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.039**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	---	**5**	**0.007**	**None required**	**0.05**	---	**2**	---	**0.005**	---	---	**0.12**	**0.001**	---	---	---	---	**0.05**	---	---	---	**7**	---	---	---	**0.02**	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			**0.76**	---	---	---	---	---	---	---	**0.005**	**0.0011**	---	**0.33**	**0.0059**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			**0.72**	---	---	---	---	---	---	---	**0.005**	**0.0017**	---	**0.29**	**0.0075**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
	18-Sep-2021	Grab	**0.78** [#1,7]	0.0010	0.0011	0.068	< 0.0010	< 0.020	0.000058	36	0.0023	0.00086	**0.0034** [#1]	**1.7** [#1,7]	0.00091	< 0.020	11	0.037	0.0000037	0.0011	0.0060	< 0.10	1.2	0.00052	3.1	< 0.00010	7.7	0.20	< 0.00020	< 0.0010	0.013	0.00085	0.0028	**0.11** [#1]
	10-Aug-2022	Grab	**0.91** [#1,7]	< 0.00060	0.0011	0.081	< 0.0010	0.020	0.000069	34	0.0014	0.0010	**0.0028** [#1]	**2.3** [#1,7]	0.0012	< 0.020	10	0.051	0.0000041	0.00087	0.0039	< 0.10	1.4	0.00032	4.9	< 0.00010	7.0	0.20	< 0.00020	< 0.0010	0.015	0.00071	0.0030	**0.053** [#1]
	11-Mar-2023	Grab	0.034	< 0.00060	0.00036	0.039	< 0.0010	< 0.020	0.000037	29	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	9.9	< 0.0040	< 0.0000019	0.00092	0.00073	< 0.10	0.89	< 0.00020	1.6	< 0.00010	9.6	0.27	< 0.00020	< 0.0010	0.0015	0.00082	< 0.0010	0.0044
	25-Jul-2023	Grab	**0.51** [#1]	< 0.00060	0.00069	0.057	< 0.0010	< 0.020	0.000041	37	< 0.0010	0.00043	0.0016	**0.78** [#1,7]	0.00044	< 0.020	11	0.023	< 0.0000019	0.0010	0.0036	< 0.10	1.1	0.00041	2.6	< 0.00010	8.1	0.22	< 0.00020	< 0.0010	0.010	0.00079	0.0013	0.0051
	19-Aug-2023	Grab	**1.4** [#1,7]	< 0.00060	0.0013	0.078	< 0.0010	< 0.020	0.000081	39	0.0023	0.00073	**0.0028** [#1]	**1.6** [#1,7]	0.00094	< 0.020	11	0.034	0.0000047	0.0012	0.0037	< 0.10	1.4	0.00048	4.2	< 0.00010	8.3	0.23	< 0.00020	< 0.0010	0.034	0.0010	0.0042	0.0091
	26-Sep-2023	Grab	**1.4** [#1,7]	< 0.00060	0.00095	0.075	< 0.0010	< 0.020	0.000079	40	0.0023	0.00092	**0.0027** [#1]	**2.0** [#1,7]	0.00099	< 0.020	12	0.051	0.0000021	0.0011	0.0037	< 0.10	1.5	0.00036	4.5	< 0.00010	9.2	0.24	< 0.00020	< 0.0010	0.031	0.00089	0.0033	0.011
	17-Mar-2024	Grab	0.024	< 0.00060	0.00037	0.041	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	9.8	< 0.0040	< 0.0000019	0.0011	0.00092	< 0.10	1.0	0.00027	1.9	< 0.00010	9.7	0.24	< 0.00020	< 0.0010	< 0.0010	0.00084	< 0.0010	< 0.0030
	19-Jul-2024	Grab	**4.5** [#1,2,7]	< 0.00060	**0.0048**	**0.14**	< 0.0010	0.025	**0.00027** [#1]	42	**0.0074** [#7]	**0.0049** [#7]	**0.010** [#1]	**9.6** [#1,7]	**0.0049** [#1]	< 0.026	13	**0.15** [#2]	0.000017	0.0015	**0.016**	0.17	2.2	0.00064	6.3	< 0.00010	7.1	0.24	< 0.00020	< 0.0010	0.041	**0.0012**	0.014	**0.065** [#1]
	15-Aug-2024	Grab	**0.47** [#1]	< 0.00060	0.00051	0.060	< 0.0010	< 0.020	0.000037	39	< 0.0010	0.00035	0.0019	**0.68** [#1,7]	0.00052	< 0.020	11	0.023	< 0.0000019	0.0011	0.0021	< 0.10	1.1	0.00041	3.2	< 0.00010	7.8	0.23	< 0.00020	< 0.0010	0.020	0.00087	0.0022	0.0043
	17-Sep-2024	Grab	**1.6** [#1,7]	< 0.00060	0.0012	0.066	< 0.0010	< 0.020	0.000092	46	0.0018	0.0010	**0.0030** [#1]	**1.5** [#1,7]	0.0014	< 0.020	11	0.041	< 0.0000019	0.0010	0.0044	< 0.10	1.5	0.00034	2.3	< 0.00010	10	0.24	< 0.00020	< 0.0010	0.048	0.00098	0.0034	0.013
AEMP-DS-06 (FGH Blue Fish)	10-Mar-2023	Grab	**0.13** [#1]	< 0.00060	0.00043	0.060	< 0.0010	< 0.020	0.000046	43	< 0.0010	< 0.00030	**0.0033** [#1]	0.12	0.00023	< 0.020	11	< 0.0040	< 0.0000019	0.0013	0.0023	< 0.10	1.2	0.00055	2.3	< 0.00010	14	0.30	< 0.00020	< 0.0010	0.0025	0.0010	0.0018	< 0.0030
(Duplicate)	10-Mar-2023	Grab	**0.13** [#1]	< 0.00060	0.00034	0.060	< 0.0010	< 0.020	0.000025	44	< 0.0010	< 0.00030	**0.0027** [#1]	0.12	0.00022	< 0.020	12	< 0.0040	< 0.0000019	0.0010	0.0016	< 0.10	1.2	0.00050	2.3	< 0.00010	14	0.29	< 0.00020	< 0.0010	0.0034	0.00099	0.0017	0.0032
	24-Jul-2023	Grab	**1.3** [#1,7]	< 0.00060	0.00093	0.075	< 0.0010	< 0.020	0.000098	44	0.0022	0.00086	**0.0027** [#1]	**1.4** [#1,7]	0.00088	< 0.020	14	0.035	< 0.0000019	0.0012	0.0035	< 0.10	1.2	0.00053	3.5	< 0.00010	9.2	0.27	< 0.00020	< 0.0010	0.021	0.0011	0.0035	0.010
	21-Aug-2023	Grab	**2.3** [#1,7]	< 0.00060	0.0014	0.098	< 0.0010	0.020	0.00010	50	0.0034	**0.0013** [#7]	**0.0032** [#1]	**2.4** [#1,7]	0.0012	< 0.020	17	0.051	0.0000035	0.0013	0.0052	< 0.10	1.7	0.00065	5.9	< 0.00010	9.5	0.29	< 0.00020	< 0.0010	0.060	0.0011	0.0072	0.016
	03-Oct-2023	Grab	**0.98** [#1,7]	< 0.00060	0.00069	0.068	< 0.0010	< 0.020	0.00014	50	< 0.0010	**0.0020** [#7]	**0.0028** [#1]	**1.3** [#1,7]	0.00045	< 0.020	20	0.028	< 0.0000019	0.0011	0.0063	< 0.10	1.1	0.00050	3.1	< 0.00010	12	0.27	< 0.00020	< 0.0010	0.0081	0.00099	0.0020	0.017
	15-Mar-2024	Grab	**1.0** [#1,7]	< 0.00060	0.0013	**0.13**	< 0.0010	0.021	0.00011	55	0.0021	**0.0016** [#7]	**0.0048** [#1]	**2.9** [#1,7]	0.0018	< 0.020	17	0.057	0.0000042	0.0012	0.0056	< 0.10	2.1	0.00050	6.1	< 0.00010	16	0.36	< 0.00020	< 0.0010	0.013	0.0010	0.0021	**0.056** [#1]
	17-Jul-2024	Grab	**1.6** [#1,7]	< 0.00060	0.0017	0.10	< 0.0010	< 0.020	0.00014	45	0.0027	**0.0017** [#7]	**0.0043** [#1]	**2.9** [#1,7]	0.0017	< 0.020	15	0.050	0.0000064	0.0012	0.0077	< 0.10	1.4	0.00057	5.6	< 0.00010	8.5	0.28	< 0.00020	< 0.0010	0.017	0.0010	0.0052	**0.041** [#1]
	14-Aug-2024	Grab	**0.87** [#1,7]	< 0.00060	0.00081	0.076	< 0.0010	< 0.020	0.000098	48	0.0018	0.00071	0.0023	**1.3** [#1,7]	0.00098	< 0.020	17	0.030	< 0.0000019	0.0012	0.0036	< 0.10	1.3	**0.00069**	4.6	< 0.00010	9.1	0.29	< 0.00020	< 0.0010	0.037	0.0011	0.0030	0.011
	18-Sep-2024	Grab	**1.1** [#1,7]	< 0.00060	0.00071	0.072	< 0.0010	< 0.020	0.000093	53	< 0.0010	**0.0019** [#7]	**0.0027** [#1]	**1.9** [#1,7]	0.00037	< 0.020	24	0.038	< 0.0000019	0.00089	0.0056	< 0.10	1.1	0.00056	2.3	< 0.00010	11	0.26	< 0.00020	< 0.0010	0.026	0.00089	0.0025	0.016
AEMP-DS-07 (FGH Ramparts)	17-Jul-2024	Grab	**2.2** [#1,7]	< 0.00060	0.0022	**0.12**	< 0.0010	0.024	0.00015	42	0.0035	**0.0024** [#7]	**0.0059** [#1]	**4.7** [#1,7]	0.0027	< 0.020	12	0.085	0.000012	0.0015	0.0079	0.13	1.6	0.00057	4.3	< 0.00010	7.1	0.23	< 0.00020	< 0.0010	0.025	0.0011	0.0070	**0.062** [#1]
	14-Aug-2024	Grab	**2.1** [#1,7]	< 0.00060	0.0021	**0.12**	< 0.0010	< 0.020	0.00014	46	0.0032	**0.0024** [#7]	**0.0054** [#1]	**4.8** [#1,7]	0.0024	< 0.020	14	0.10	0.0000061	0.0013	0.0076	0.13	1.5	0.00050	4.3	< 0.00010	7.6	0.25	< 0.00020	< 0.0010	0.027	0.0011	0.0059	**0.055** [#1]
	18-Sep-2024	Grab	**0.36** [#1]	< 0.00060	0.00054	0.068	< 0.0010	0.020	0.000043	41	< 0.0010	0.00035	0.0016	**0.60** [#1,7]	0.00024	< 0.020	12	0.015	< 0.0000019	0.0010	0.0022	< 0.10	1.2	0.00044	2.0	< 0.00010	8.7	0.30	< 0.00020	< 0.0010	0.0063	0.00086	0.0013	0.0040
AEMP-DS-08 (Radar South)	19-Jul-2024	Grab	**3.2** [#1,1,7]	< 0.00060	**0.0043**	**0.12**	< 0.0010	0.025	**0.00022** [#1]	40	**0.0061** [#7]	**0.0041** [#7]	**0.0083** [#1]	**8.2** [#1,7]	**0.0046** [#1]	< 0.026	12	**0.13** [#2]	0.000012	0.0014	**0.014**	0.15	2.1	0.00053	5.7	< 0.00010	7.6	0.24	< 0.00020	< 0.0010	0.035	0.0011	0.012	**0.064** [#1]
	15-Aug-2024	Grab	**0.96** [#1,7]	< 0.00060	0.00090	0.070	< 0.0010	0.021	0.000075	37	0.0012	0.00079	**0.0027** [#1]	**1.7** [#1,7]	0.0010	< 0.020	11	0.040	0.0000025	0.0011	0.0031	< 0.10	1.4	0.00045	2.8	< 0.00010	12	0.24	< 0.00020	< 0.0010	0.013	0.00088	0.0024	**0.032** [#1]
	17-Sep-2024	Grab	**0.28** [#1]	< 0.00060	0.00058	0.049	< 0.0010	0.021	0.000063	41	< 0.0010	0.00036	0.0016	**0.32** [#1]	0.00026	< 0.020	11	0.010	< 0.0000019	0.0011	0.0025	< 0.10	1.2	0.00038	1.8	< 0.00010	10	0.23	< 0.00020	< 0.0010	0.0077	0.00092	< 0.0010	0.0060
AEMP-DS-09 (End of Facility)	17-Mar-2024	Grab	0.069	< 0.00060	0.00046	0.065	< 0.0010	< 0.020	0.000027	45	< 0.0010	< 0.00030	**0.0026** [#1]	0.089	< 0.00020	< 0.020	12	< 0.0040	< 0.0000019	**0.0025**	0.0025	< 0.10	1.3	0.00051	2.7	< 0.00010	15	0.34	< 0.00020	< 0.0010	0.0027	**0.0014**	0.0011	0.0048
	19-Jul-2024	Grab	**1.5** [#1,7]	< 0.00060	0.0016	0.079	< 0.0010	< 0.020	0.000073	39	0.0025	**0.0012** [#7]	**0.0036** [#1]	**2.7** [#1,7]	0.0013	< 0.020	11	0.033	0.000014 [#4]	0.0011	0.0060	< 0.10	1.4	0.00046	3.3	< 0.00010	6.9	0.24	< 0.00020	< 0.0010	0.031	0.00091	0.0049	**0.039** [#1]
	15-Aug-2024	Grab	**1.2** [#1,7]	< 0.00060	0.00088	0.072	< 0.0010	< 0.020	0.000078	41	0.0016	0.00086	0.0023	**1.5** [#1,7]	0.00080	< 0.020	12	0.046	< 0.0000019	0.0011	0.0034	< 0.10	1.7	0.00049	2.7	< 0.00010	19	0.26	< 0.00020	< 0.0010	0.032	0.0010	0.0036	0.0086
	17-Sep-2024	Grab	**0.38** [#1]	< 0.00060	0.00048	0.063	< 0.0010	< 0.020	0.000063	50	< 0.0010	0.00041	0.0018	**0.45** [#1,7]	0.00031	< 0.020	13	0.024	< 0.0000019	0.0013	0.0034	< 0.10	1.3	0.00047	2.1	< 0.00010	9.9	0.29	< 0.00020	< 0.0010	0.0058	0.0011	0.0010	0.0069
UPSTREAM																																		
AEMP-US-01 (Midway)	12-Mar-2023	Grab	**1.6** [#1,7]	< 0.00060	0.0014	0.073	< 0.0010	< 0.020	0.000072	23	0.0029	**0.0013** [#7]	**0.0027** [#1]	**2.6** [#1,7]	0.0017	< 0.020	9.5	0.069	0.0000046	0.00057	0.0039	< 0.10	1.4	< 0.00020	5.0	< 0.00010	7.8	0.18	< 0.00020	< 0.0010	0.062	0.00059	0.0051	0.016
	25-Jul-2023	Grab	**0.39** [#1]	< 0.00060	0.00048	0.051	< 0.0010	< 0.020	0.000033	34	< 0.0010	< 0.00030	0.0013	**0.48** [#1,7]	0.00028	< 0.020	10	0.014	< 0.0000019	0.00095	0.0015	< 0.10	1.1	0.00031	2.4	< 0.00010	8.7	0.22	< 0.00020	< 0.0010	0.0093	0.00068	< 0.0010	0.0031
	19-Aug-2023	Grab	**0.70** [#1]	0.00075	0.00071	0.054	< 0.0010	< 0.020	0.000048	30	0.0013	0.00036	0.0017	**0.78** [#1,7]	0.00056	< 0.020	9.8	0.018	0.0000028	0.00090	0.0021	< 0.10	1.0	0.00035	2.6	< 0.00010	8.5	0.21	< 0.00020	< 0.0010	0.016	0.00071	0.0023	0.0050
	26-Sep-2023	Grab	0.079	< 0.00060	0.00026	0.035	< 0.0010	< 0.020	< 0.000020	24	< 0.0010	< 0.00030	< 0.0010	0.11	< 0.00020	< 0.020	8.9	0.0045	< 0.0000019	0.00058	0.00071	< 0.10	0.82	< 0.00020	1.3	< 0.00010	7.7	0.18	< 0.00020	< 0.0010	0.0019	0.00048	< 0.0010	< 0.0030
	16-Mar-2024	Grab	**0.38** [#1]	< 0.00060	0.00038	0.044	< 0.0010	< 0.020	< 0.000020	25	< 0.0010	< 0.00030	0.0017	**0.64** [#1,7]	0.00030	< 0.020	9.1	0.013	---	0.00058	0.0014	< 0.10	1.1	< 0.00020	3.0	< 0.00010	8.4	0.18	< 0.00020	< 0.0010	0.011	0.00047	< 0.0010	0.0064
	19-Jul-2024	Grab	**3.2** [#1,2,7]	< 0.00060	0.0033	0.10	< 0.0010	0.025	**0.00017** [#1]	33	**0.0052** [#7]	**0.0033** [#7]	**0.0072** [#1]	**6.6** [#1,7]	0.0034	< 0.020	11	0.11	< 0.0000019	0.0014	0.011	0.12	1.7	0.00047	5.1	< 0.00010	8.5	0.21	< 0.00020	< 0.0010	0.032	0.00094	0.0097	**0.052** [#1]
	15-Aug-2024	Grab	**0.30** [#1]	< 0.00060	0.00044	0.051	< 0.0010	< 0.020	0.000021	30	< 0.0010	< 0.00030	0.0011	**0.45** [#1,7]	0.00025	< 0.020	10	0.013	< 0.0000019	0.00088	0.0013	< 0.10	1.0	0.00028	2.2	< 0.00010	8.7	0.21	< 0.00020	< 0.0010	0.012	0.00066	0.0010	< 0.0030
	17-Sep-2024	Grab	**0.23** [#1]	< 0.00060	0.00043	0.045	< 0.0010	< 0.020	0.000029	26	< 0.0010	< 0.00030	< 0.0010	**0.38** [#1,7]	0.00049	< 0.020	8.8	0.011	< 0.0000019	0.00062	0.0015	< 0.10	0.89	< 0.00020	1.4	< 0.00010	12	0.19	< 0.00020	< 0.0010	0.0068	0.00051	< 0.0010	< 0.0030
AEMP-US-02 (10 mile)	23-Jun-2018	Grab	**0.93** [#1,7]	< 0.00060	0.0011	0.061	< 0.0010	< 0.020	0.000080	32	0.0018	**0.0012** [#7]	**0.0036** [#1]	**1.5** [#1,7]	0.00093	< 0.020	8.7	0.031	0.0000033	0.0011	0.0050	< 0.10	1.1	0.00041	2.5	< 0.00010	6.1	0.15	< 0.00020	< 0.0010	0.024	0.00085	0.0027	0.011
	14-Aug-2018	Grab	**1.6** [#1,7]	< 0.00060	0.0013	0.077	< 0.0010	< 0.020	0.00015	40	0.0014	**0.0016** [#7]	**0.0037** [#1]	**2.0** [#1,7]	0.0012	< 0.020	12	0.052	0.0000068	0.0011	0.0057	< 0.10	1.3	0.00047	4.1	< 0.00010	7.8	0.24	< 0.00020	< 0.0010	0.029	0.00084	0.0035	**0.021** [#1]
(Duplicate)	14-Aug-2018	Grab	**1.4** [#1,7]	< 0.00060	0.0011	0.076	< 0.0010	< 0.020	0.00015	40	0.0016	**0.0015** [#7]	**0.0036** [#1]	**2.1** [#1,7]	0.0011	< 0.020	12	0.052	0.0000052	0.0011	0.0054	< 0.10	1.3	0.00042	3.8	< 0.00010	7.7	0.23	< 0.00020	< 0.0010	0.068	0.00086	0.0037	**0.020** [#1]
	18-Oct-2018	Grab	**0.44** [#1]	< 0.00060	0.00069	0.057	< 0.0010	< 0.020	0.000053	28	< 0.0010	0.00047	0.0016	**0.89** [#1,7]	0.00057	< 0.020	9.6	0.028	< 0.0000020	0.00079	0.0031	< 0.10	0.98	< 0.00020	1.9	< 0.00010	9.5	0.22	< 0.00020	< 0.0010	0.014	0.00057	0.0016	0.0055
	10-Jun-2019	Grab	**2.0** [#1,7]	0.00096	0.0021	0.098	< 0.0010	< 0.020	0.00015	38	0.0033	**0.0024** [#7]	**0.0074** [#1]	**4.8** [#1,7]	0.0026	< 0.020	10	0.11	0.0000090	0.0012	0.0081	0.11	1.5	0.00038	4.0	< 0.00010	6.2	0.18	< 0.00020	< 0.0010	0.028	0.00087	0.0056	**0.042** [#1]
	26-Aug-2019	Grab	**1.7** [#1,7]	< 0.00060	0.0013	0.076	< 0.0010	< 0.020	0.000083	40	0.0026	0.0010	**0.0031** [#1]	**2.2** [#1,7]	0.0011	< 0.020	11	0.042	< 0.0000020	0.0011	0.0043	< 0.10	1.5	0.00053	5.2	< 0.00010	8.1	0.24	< 0.00020	< 0.0010	0.028	0.00097	0.0048	0.013
	01-Oct-2019	Grab	**1.6** [#1,7]	< 0.00060	0.0011	0.085	< 0.0010	< 0.020	0.000086	37	0.0026	0.0010	**0.0043** [#1]	**2.3** [#1,7]	0.0014	< 0.020	11	0.028	0.0000061	0.0012	0.0051	< 0.10	1.4	0.00050	3.1	< 0.00010	8.9	0.24	< 0.00020	< 0.0010	0.039	0.00095	0.0050	0.012
	12-Jun-2020	Grab	**4.7** [#1,2,7]	< 0.00060	0.0039	0.16	< 0.0010	< 0.020	**0.00028** [#1]	45	**0.0074** [#7]	**0.0049** [#7]	**0.012** [#1]	**11** [#1,7]	**0.0051** [#1,2]	< 0.020	13	**0.18** [#2]	0.000024 [#4]	0.0019	0.017	0.19	2.0	0.00061	7.8	< 0.00010	5.2	0.22	< 0.00020	< 0.0010	0.044	0.0011	0.013	**0.079** [#1]
	28-Jul-2020	Grab	**1.1** [#1,7]	< 0.00060	0.0017	0.084	< 0.0010	< 0.020	0.00012	39	0.0032	**0.0013** [#7]	**0.0042** [#1]	**2.8** [#1,7]	0.0016	< 0.020	10	0.064	< 0.000019 [#4]	0.0011	0.0063	< 0.10	1.0	0.00067	3.3	< 0.00010	6.0	0.19	< 0.00020	< 0.0010	0.020	0.00083	0.0037	0.012
	22-Sep-2020	Grab	**0.76** [#1,7]	0.00087	0.00099	0.060	< 0.0010	< 0.020	0.000065	39	0.0021	0.00075	**0.0028** [#1]	**1.2** [#1,7]	0.00075	< 0.020	10	0.032	0.0000023	0.0012	0.0039	< 0.10	1.1	0.00050	3.0	0.00013	7.2	0.19	< 0.00020	< 0.0010	0.016	0.00094	0.0038	0.0077
	07-Jun-2021	Grab	**2.7** [#1,7]	< 0.00060	0.0016	0.081	< 0.0010	0.020	0.000088	38	0.0044	**0.0015** [#7]	**0.0050** [#1]	**3.3** [#1,7]	0.0017	< 0.020	10	0.064	0.0000029	0.00099	0.0066	< 0.10	1.6	0.00032	4.2	< 0.00010	7.1	0.17	< 0.00020	< 0.0010	0.069	0.00079	0.0075	0.017
	19-Aug-2021	Grab	**3.0** [#1,2,7]	< 0.00060	0.0027	0.12	< 0.0010	0.048	**0.00018** [#1]	41	0.0045	**0.0029** [#7]	**0.0073** [#1]	**6.6** [#1,7]	0.0030	< 0.020	12	0.12 [#2]	0.000011	0.0015	0.0098	0.13	2.1	0.00052	7.9	< 0.00010	6.9	0.21	< 0.00020	0.0013	0.031	0.0011	0.0082	**0.099** [#1]
	18-Sep-2021	Grab	**1.7** [#1,7]	< 0.00060	0.0013	0.075	< 0.0010	< 0.020	0.000062	37	0.0033	0.0010	**0.0032** [#1]	**1.9** [#1,7]	0.0010	< 0.020	11	0.039	0.0000038	0.0011	0.0046	< 0.10	1.6	0.00042	5.9	< 0.00010	7.5	0.21	< 0.00020	< 0.0010	0.040	0.00091	0.0053	0.0098
	10-Aug-2022	Grab	**0.84** [#1,7]	< 0.00060	0.0010	0.075	< 0.0010	< 0.020	0.000077	35	< 0.0010	0.00076	**0.0024** [#1]	**1.6** [#1,7]	0.00088	< 0.020	10	0.037	0.0000034	0.00086	0.0033	< 0.10	1.3	0.00030	4.6	< 0.00010	7.2	0.21	< 0.00020	< 0.0010	0.015	0.00076	0.0024	0.0097
	12-Mar-2023	Grab	0.037	< 0.00060	< 0.00020	0.036	< 0.0010	< 0.020	< 0.000020	24	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	8.6	< 0.0040	< 0.0000019	0.00060	0.00078	< 0.10	0.77	< 0.00020	1.5	< 0.00010	8.2	0.20	< 0.00020	< 0.0010	< 0.0010	0.00050	< 0.0010	< 0.0030

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00017**	---	**0.0089**	---	**0.00257**	**0.3**	**0.00359**	---	---	**0.37**	**0.000026**	**0.073**	**0.1028**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.019**
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00037**	---	**0.0089**	---	**0.004**	**0.3**	**0.007**	---	---	**0.29**	**0.000026**	**0.073**	**0.1500**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.039**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	---	**5**	**0.007**	**None required**	**0.05**	---	**2**	---	**0.005**	---	---	**0.12**	**0.001**	---	---	---	---	**0.05**	---	---	---	**7**	---	---	---	**0.02**	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			**0.76**	---	---	---	---	---	---	---	**0.005**	**0.0011**	---	**0.33**	**0.0059**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			**0.72**	---	---	---	---	---	---	---	**0.005**	**0.0017**	---	**0.29**	**0.0075**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
	25-Jul-2023	Grab	**0.23** [#1]	< 0.00060	0.00048	0.052	< 0.0010	< 0.020	0.000029	38	< 0.0010	< 0.00030	0.0012	**0.30** [#1]	0.00022	< 0.020	11	0.014	< 0.0000019	0.0012	0.0015	< 0.10	1.0	0.00037	2.0	< 0.00010	8.8	0.24	< 0.00020	< 0.0010	0.0050	0.00083	< 0.0010	< 0.0030
	19-Aug-2023	Grab	**1.5** [#1,7]	< 0.00060	0.0012	0.078	< 0.0010	< 0.020	0.000067	37	0.0026	0.00087	**0.0027** [#1]	**1.7** [#1,7]	0.00098	< 0.020	11	0.040	0.0000025	0.0013	0.0045	< 0.10	1.4	0.00045	4.4	< 0.00010	8.4	0.24	< 0.00020	< 0.0010	0.046	0.00098	0.0048	0.0095
	24-Sep-2023	Grab	**0.96** [#1,7]	< 0.00060	0.00095	0.072	< 0.0010	< 0.020	0.000063	36	0.0015	0.00084	**0.0026** [#1]	**1.6** [#1,7]	0.00097	< 0.020	12	0.040	< 0.0000019	0.0014	0.0052	< 0.10	1.2	0.00038	2.8	< 0.00010	9.9	0.26	< 0.00020	< 0.0010	0.017	0.0010	0.0024	0.0093
	17-Mar-2024	Grab	0.046	< 0.00060	0.00041	0.041	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.0012	0.062	< 0.00020	< 0.020	9.4	< 0.0040	< 0.0000019	0.0010	0.0012	< 0.10	0.92	0.00024	1.9	< 0.00010	9.7	0.22	< 0.00020	< 0.0010	< 0.0010	0.00083	< 0.0010	< 0.0030
	19-Jul-2024	Grab	**1.7** [#1,7]	< 0.00060	0.00092	0.035	< 0.0010	< 0.020	0.000048	10	0.0029	0.00088	0.0019	**1.8** [#1,7]	0.0011	< 0.020	3.1	0.024	0.000011	0.00044	0.0030	< 0.10	0.64	< 0.00020	1.6	< 0.00010	2.2	0.065	< 0.00020	< 0.0010	0.085	0.00032	0.0071	0.0091
	15-Aug-2024	Grab	**0.49** [#1]	< 0.00060	0.00051	0.054	< 0.0010	< 0.020	0.000029	35	< 0.0010	0.00031	0.0014	**0.53** [#1,7]	0.00037	< 0.020	11	0.016	< 0.0000019	0.0010	0.0019	< 0.10	1.1	0.00036	2.5	< 0.00010	8.0	0.23	< 0.00020	< 0.0010	0.0077	0.00080	0.0014	0.0035
	17-Sep-2024	Grab	0.091	< 0.00060	0.00034	0.040	< 0.0010	< 0.020	0.000021	30	< 0.0010	< 0.00030	< 0.0010	0.097	< 0.00020	0.025	9.4	0.0052	< 0.0000019	0.00093	0.0014	< 0.10	0.89	0.00024	1.3	< 0.00010	7.4	0.22	< 0.00020	< 0.0010	0.0015	0.00071	< 0.0010	< 0.0030
AEMP-US-03 (Norman Wells Upstream)	09-Mar-2023	Grab	0.027	< 0.00060	0.00024	0.035	< 0.0010	< 0.020	0.000023	26	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	9.1	< 0.0040	< 0.0000019	0.00057	0.00071	< 0.10	0.80	< 0.00020	1.5	< 0.00010	8.6	0.21	< 0.00020	< 0.0010	< 0.0010	0.00046	0.0010	< 0.0030
	17-Mar-2024	Grab	0.025	< 0.00060	0.00034	0.040	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	9.6	< 0.0040	< 0.0000019	0.0010	0.0010	< 0.10	0.91	0.00025	1.9	< 0.00010	9.5	0.23	< 0.00020	0.022	< 0.0010	0.00077	< 0.0010	< 0.0030
	19-Jul-2024	Grab	**4.3** [#1,2,7]	< 0.00060	0.0043	0.13	< 0.0010	0.022	**0.00023** [#1]	38	**0.0068** [#7]	**0.0044** [#7]	**0.0091** [#1]	**8.8** [#1,7]	**0.0046** [#1]	< 0.020	11	**0.14** [#2]	0.000014 [#4]	0.0017	0.014	0.17	1.9	0.00060	6.4	< 0.00010	7.3	0.22	< 0.00020	< 0.0010	0.038	0.0011	0.013	**0.058** [#1]
	16-Aug-2024	Grab	**6.3** [#1,2,7]	< 0.0024	**0.0066** [#1]	0.24	< 0.0040	0.024	**0.00044** [#1]	57	**0.011** [#1,7]	**0.0076** [#7]	**0.015** [#1]	**15** [#1,7]	**0.0072** [#1,2,7]	< 0.020	18	**0.31** [#2]	0.000021	0.0019	0.021	0.36	3.4	0.00099	9.3	< 0.00040 [#1]	8.1	0.28	< 0.00080	< 0.0040	0.066	0.0013	0.019	**0.24** [#1]
	12-Sep-2024	Grab	**0.12** [#1]	< 0.00060	0.00038	0.045	< 0.0010	< 0.020	0.000037	32	< 0.0010	< 0.00030	0.0011	0.11	< 0.00020	< 0.020	11	0.0050	< 0.0000019	0.00094	0.0016	< 0.10	0.94	0.00033	1.4	< 0.00010	8.2	0.22	< 0.00020	< 0.0010	0.0016	0.00077	< 0.0010	< 0.0030
BOSWORTH CREEK																																		
Bosworth Upstream Data UCL			**0.138**	---	**0.00042**	**0.089**	---	---	**0.0001**	---	**0.005**	---	**0.0010**	**0.297**	---	---	---	---	---	**0.0023**	**0.00130**	---	---	**0.00039**	---	---	---	---	---	---	---	---	**0.0015**	---	**0.015**
Bosworth Upstream Data LCL			**<0.003**	---	**<0.00020**	**0.066**	---	---	**N/C**	---	**N/C**	---	**0.00014**	**<0.060**	---	---	---	---	---	**0.0014**	**<0.0005**	---	---	**<0.0002**	---	---	---	---	---	---	---	---	**0.0009**	---	**N/C**
DOWNSTREAM																																		
AEMP-DS-01 (Lower Bosworth Creek)	18-Aug-2017	Grab	0.039	< 0.00060	0.00026	0.085	< 0.0010	0.031	0.000020	74	< 0.0010	< 0.00030	0.00092	0.11	< 0.00020	< 0.020	27	0.0098	0.0000021	0.0018	0.00079	< 0.10	1.1	0.00021	2.1	< 0.00010	22	1.3	< 0.00020	< 0.0010	0.0032	0.0010	0.0014	< 0.0030
	16-Sep-2017	Grab	0.031	< 0.00060	0.00032	0.082	< 0.0010	0.024	< 0.000020	73	< 0.0010	< 0.00030	0.00064	0.096	< 0.00020	< 0.020	29	0.0087	< 0.0000020	0.0017	0.00077	< 0.10	1.0	< 0.00020	2.1	< 0.00010	19	1.3	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
(Duplicate)	16-Sep-2017	Grab	0.032	< 0.00060	0.00027	0.080	< 0.0010	0.023	< 0.000020	72	< 0.0010	< 0.00030	0.00035	0.10	< 0.00020	< 0.020	28	0.0084	< 0.0000020	0.0018	0.00078	< 0.10	0.98	< 0.00020	2.1	< 0.00010	19	1.2	< 0.00020	< 0.0010	< 0.0010	0.0011	0.0013	< 0.0030
	16-Oct-2017	Grab	**0.23** [#1]	< 0.00060	0.00040	0.079	< 0.0010	0.022	0.000027	75	< 0.0010	< 0.00030	0.00074	**0.57** [#1,7]	0.00030	< 0.020	31	0.020	< 0.0000020	0.0019	**0.0014**	< 0.10	1.1	0.00025	2.3	< 0.00010	20	1.4	< 0.00020	< 0.0010	0.0039	0.0012	0.0020	< 0.0030
	23-Jun-2018	Grab	0.047	< 0.00060	0.00036	0.086	< 0.0010	0.029	< 0.000020	76	< 0.0010	< 0.00030	0.00073	0.12	< 0.00020	< 0.020	27	0.0085	< 0.0000020	**0.0027**	0.0012	< 0.10	1.1	0.00031	2.0	< 0.00010	18	1.3	< 0.00020	< 0.0010	< 0.0010	**0.0016**	< 0.0010	< 0.0030
	12-Aug-2018	Grab	0.030	< 0.00060	0.00026	0.073	< 0.0010	0.023	< 0.000020	72	< 0.0010	< 0.00030	0.00033	0.11	< 0.00020	< 0.020	28	0.0091	0.0000025	0.0018	0.0010	< 0.10	0.93	< 0.00020	2.1	< 0.00010	14	1.3	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	16-Oct-2018	Grab	**0.20** [#1]	< 0.00060	0.00024	0.074	< 0.0010	0.027	0.000031	78	< 0.0010	< 0.00030	0.00071	**0.50** [#1,7]	0.00026	< 0.020	31	0.017	0.0000020	0.0019	**0.0013**	< 0.10	1.1	0.00031	2.3	< 0.00010	18	1.5	< 0.00020	< 0.0010	0.0038	0.0013	< 0.0010	< 0.0030
	03-Jun-2019	Grab	0.081	< 0.00060	0.00032	0.076	< 0.0010	0.022	< 0.000020	67	< 0.0010	< 0.00030	0.00076	0.18	< 0.00020	< 0.020	25	0.0078	< 0.0000020	0.0016	0.00089	< 0.10	1.1	< 0.00020	1.8	< 0.00010	15	1.1	< 0.00020	< 0.0010	0.0012	0.0011	< 0.0010	< 0.0030
(Duplicate)	03-Jun-2019	Grab	0.078	< 0.00060	0.00027	0.077	< 0.0010	0.022	< 0.000020	68	< 0.0010	< 0.00030	0.00061	0.19	< 0.00020	< 0.020	25	0.0081	< 0.0000020	0.0017	0.00079	< 0.10	1.0	< 0.00020	1.8	< 0.00010	15	1.1	< 0.00020	< 0.0010	0.0022	0.0011	< 0.0010	< 0.0030
	28-Aug-2019	Grab	0.079	< 0.00060	0.00023	0.083	< 0.0010	0.023	< 0.000020	79	< 0.0010	< 0.00030	0.00047	0.17	< 0.00020	< 0.020	28	0.0087	< 0.0000020	0.0018	0.00083	< 0.10	1.1	< 0.00020	2.1	< 0.00010	17	1.2	< 0.00020	< 0.0010	0.077	0.0011	< 0.0010	< 0.0030
	03-Oct-2019	Grab	0.020	< 0.00060	< 0.00020	0.075	< 0.0010	0.029	< 0.000020	79	< 0.0010	< 0.00030	0.00051	0.082	< 0.00020	< 0.020	28	0.0078	< 0.0000020	0.0016	0.0010	< 0.10	1.0	0.00032	1.8	< 0.00010	19	1.4	< 0.00020	< 0.0010	0.0010	0.0012	< 0.0010	< 0.0030
	10-Jun-2020	Grab	0.082	< 0.00060	0.00038	0.081	< 0.0010	< 0.020	< 0.000020	72	< 0.0010	< 0.00030	0.00067	**0.29** [#7]	< 0.00020	< 0.020	26	0.0067	< 0.0000019	**0.0026**	0.00091	< 0.10	1.0	< 0.00020	2.2	< 0.00010	13	1.2	< 0.00020	< 0.0010	0.0024	**0.0015**	< 0.0010	< 0.0030
	24-Jul-2020	Grab	0.024	< 0.00060	< 0.00020	0.081	< 0.0010	0.029	< 0.000020	81	0.0010	< 0.00030	0.00063	0.12	< 0.00020	< 0.020	28	0.0078	< 0.0000019	0.0019	< 0.00050	< 0.10	0.89	< 0.00020	1.9	< 0.00010	22	1.4	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	0.0033
	18-Sep-2020	Grab	0.016	< 0.00060	0.00031	0.082	< 0.0010	0.025	< 0.000020	82	< 0.0010	< 0.00030	0.00058	0.074	< 0.00020	< 0.020	28	0.0074	0.0000024	0.0018	0.00094	< 0.10	1.2	0.00020	1.9	< 0.00010	19	1.4	< 0.00020	0.0020	< 0.0010	0.0014	< 0.0010	< 0.0030
	06-Jun-2021	Grab	0.095	< 0.00060	0.00036	0.072	< 0.0010	0.024	0.000034	72	0.0019	< 0.00030	0.00093	0.18	< 0.00020	< 0.020	26	0.0086	< 0.0000019	0.0018	**0.0013**	< 0.10	0.95	0.00024	2.1	< 0.00010	15	1.2	< 0.00020	< 0.0010	0.0042	0.0012	< 0.0010	< 0.0030
	18-Aug-2021	Grab	0.012	< 0.00060	< 0.00020	0.078	< 0.0010	0.036	< 0.000020	78	< 0.0010	< 0.00030	0.00045	0.070	< 0.00020	< 0.020	30	0.0076	< 0.0000019	0.0020	0.00071	< 0.10	1.2	< 0.00020	2.3	< 0.00010	26	1.5	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	< 0.0030
	19-Sep-2021	Grab	0.012	< 0.00060	0.00028	0.080	< 0.0010	0.040	< 0.000020	86	< 0.0010	< 0.00030	0.00047	0.065	< 0.00020	< 0.020	32	0.0078	< 0.0000019	0.0019	0.00058	< 0.10	1.1	0.00024	2.2	< 0.00010	31	1.6	< 0.00020	< 0.0010	0.0012	0.0011	< 0.0010	0.0043
	11-Jun-2022	Grab	0.038	< 0.00060	0.00020	0.072	< 0.0010	0.025	< 0.000020	65	< 0.0010	< 0.00030	< 0.0010	0.11	< 0.00020	< 0.020	23	0.0076	< 0.0000019	0.0018	0.00088	< 0.10	0.91	< 0.00020	1.8	< 0.00010	16	1.2	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030
	06-Aug-2022	Grab	0.019	< 0.00060	0.00024	0.081	< 0.0010	0.033	< 0.000020	74	< 0.0010	< 0.00030	< 0.0010	0.063	< 0.00020	< 0.020	27	0.0060	< 0.0000019	0.0017	0.00073	< 0.10	1.1	< 0.00020	2.2	< 0.00010	23	1.4	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	0.0078
	26-Sep-2022	Grab	0.018	< 0.00060	< 0.00020	0.068	< 0.0010	0.032	< 0.000020	80	< 0.0010	< 0.00030	< 0.0010	0.066	< 0.00020	< 0.020	28	0.0067	< 0.0000019	0.0018	0.00066	< 0.10	1.1	0.00024	2.1	< 0.00010	26	1.3	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	26-Jul-2023	Grab	0.029	< 0.00060	0.00022	0.086	< 0.0010	0.044	< 0.000020	88	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	33	0.0077	< 0.0000019	0.0020	0.00082	< 0.10	1.3	< 0.00020	2.5	< 0.00010	28	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	18-Aug-2023	Grab	0.043	< 0.00060	0.00036	0.083	< 0.0010	0.039	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	0.095	< 0.00020	< 0.020	31	0.0085	< 0.0000019	0.0021	0.00060	< 0.10	1.2	< 0.00020	2.4	< 0.00010	30	1.5	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	< 0.0030
(Duplicate)	18-Aug-2023	Grab	0.040	< 0.00060	0.00035	0.083	< 0.0010	0.040	< 0.000020	84	< 0.0010	< 0.00030	< 0.0010	0.10	< 0.00020	< 0.020	31	0.0084	< 0.0000019	0.0021	**0.0023**	< 0.10	1.2	< 0.00020	2.4	< 0.00010	31	1.5	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	25-Sep-2023	Grab	0.024	< 0.00060	< 0.00020	0.084	< 0.0010	0.041	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.084	< 0.00020	< 0.020	36	0.0079	< 0.0000019	0.0017	0.00067	< 0.10	1.2	< 0.00020	2.6	< 0.00010	27	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
(Duplicate)	25-Sep-2023	Grab	0.018	< 0.00060	0.00025	0.085	< 0.0010	0.037	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	0.13	< 0.00020	< 0.020	32	0.0090	< 0.0000019	0.0024	< 0.00050	< 0.10	1.2	0.00024	2.5	< 0.00010	27	1.6	< 0.00020	< 0.0010	< 0.0010	**0.0015**	< 0.0010	< 0.0030
	18-Jul-2024	Grab	0.051	< 0.00060	0.00031	0.087	< 0.0010	0.039	< 0.000020	80	< 0.0010	< 0.00030	< 0.0010	0.11	< 0.00020	< 0.020	31	0.0074	< 0.0000019	0.0021	**0.0036**	< 0.10	1.2	< 0.00020	2.5	< 0.00010	27	1.6	< 0.00020	< 0.0010	0.0022	0.0012	< 0.0010	0.0093
	16-Aug-2024	Grab	0.010	< 0.00060	0.00021	0.087	< 0.0010	0.044	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	34	0.0053	< 0.0000019	0.0020	< 0.00050	< 0.10	1.3	< 0.00020	2.3	< 0.00010	33	1.7	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	13-Sep-2024	Grab	0.074	< 0.00060	0.00022	0.082	< 0.0010	0.040	< 0.000020	84	< 0.0010	< 0.00030	< 0.0010	0.18	< 0.00020	< 0.020	32	0.011	< 0.0000019	**0.0059**	0.00075	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
(Duplicate)	13-Sep-2024	Grab	0.059	< 0.00060	0.00023	0.084	< 0.0010	0.050	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.16	< 0.00020	< 0.020	33	0.011	< 0.0000019	0.0019	0.00061	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	0.0019	0.0011	< 0.0010	< 0.0030
UPSTREAM																																		
AEMP-US-04 (Upper Bosworth Creek)	26-Jul-2023	Grab	0.024	< 0.00060	0.00025	0.080	< 0.0010	0.040	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	31	0.0066	< 0.0000019	0.0019	0.00071	< 0.10	1.2	0.00022	2.4	< 0.00010	25	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	18-Aug-2023	Grab	0.033	< 0.00060	< 0.00020	0.077	< 0.0010	0.040	< 0.000020	80	< 0.0010	< 0.00030	< 0.0010	0.068	< 0.00020	< 0.020	29	0.0081	< 0.0000019	0.0021	0.00072	< 0.10	1.1	0.00025	2.3	< 0.00010	27	1.4	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	24-Sep-2023	Grab	**0.22** [#1]	< 0.00060	0.00030	0.083	< 0.0010	0.030	< 0.000020	82	< 0.0010	< 0.00030	< 0.0010	**0.45** [#1,7]	< 0.00020	< 0.020	32	0.023	< 0.0000019	0.0021	0.0011	< 0.10	1.2	0.00022	2.9	< 0.00010	25	1.5	< 0.00020	< 0.0010	0.0028	0.0014	< 0.0010	< 0.0030
	18-Jul-2024	Grab	0.088	< 0.00060	< 0.00020	0.086	< 0.0010	0.038	< 0.000020	79	< 0.0010	< 0.00030	< 0.0010	0.22	< 0.00020	< 0.020	31	0.011	< 0.0000019	0.0018	0.0010	< 0.10	1.2	< 0.00020	2.5	< 0.00010	26	1.6	< 0.00020	< 0.0010	0.0021	0.0011	< 0.0010	< 0.0030
	16-Aug-2024	Grab	0.055	< 0.00060	< 0.00020	0.089	< 0.0010	0.055	< 0.000020	87	< 0.0010	< 0.00030	< 0.0010	0.095	< 0.00020	< 0.020	35	0.0094	< 0.0000019	0.0021	0.00060	< 0.10	1.3	< 0.00020	2.5	< 0.00010	33	1.7	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	< 0.0030
	13-Sep-2024	Grab	**0.40** [#1]	< 0.00060	0.00048	0.088	< 0.0010	0.037	< 0.000020	83	< 0.0010	0.00052	0.0010	**0.75** [#1,7]	0.00046	< 0.020	33	0.028	< 0.0000019	0.0021	0.0018	< 0.10	1.3	0.00024	2.5	< 0.00010	32	1.6	< 0.00020	< 0.0010	0.0062	0.0014	0.0010	0.0034
AEMP-US-05	19-Jul-2024	Grab	0.022	< 0.00060	0.00023	0.084	< 0.0010	0.045	< 0.000020	79	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.026	32	0.0061	< 0.0000019	0.0019	0.0011	< 0.10	1.1	< 0.00020	2.2	< 0.00010	26	1.7	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	16-Aug-2024	Grab	0.017	< 0.00060	< 0.00020	0.085	< 0.0010	0.046	< 0.000020	88	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	35	0.0073	< 0.0000019	0.0019	0.00054	< 0.10	1.3	< 0.00020	2.3	< 0.00010	33	1.7	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	12-Sep-2024	Grab	0.018	< 0.00060	0.00023	0.080	< 0.0010	0.036	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.070	0.00082	< 0.020	33	0.0063	< 0.0000019	0.0020	0.00061	< 0.10	1.2	< 0.00020	2.2	< 0.00010	33	1.6	< 0.00020	< 0.0010	0.0016	0.0012	< 0.0010	< 0.0030

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00017**	**---**	**0.0089**	**---**	**0.00257**	**0.3**	**0.00359**	**---**	**---**	**0.37**	**0.000026**	**0.073**	**0.1028**	**---**	**---**	**0.001**	**---**	**0.00025**	**---**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.019**
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00037**	**---**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.29**	**0.000026**	**0.073**	**0.1500**	**---**	**---**	**0.001**	**---**	**0.00025**	**---**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.039**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	**---**	**5**	**0.007**	**None required**	**0.05**	**---**	**2**	**---**	**0.005**	**---**	**---**	**0.12**	**0.001**	**---**	**---**	**---**	**---**	**0.05**	**---**	**---**	**---**	**7**	**---**	**---**	**---**	**0.02**	**---**	**---**
Federal Environmental Quality Guidelines - Mackenzie River [#7]			**0.76**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0011**	**---**	**0.33**	**0.0059**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			**0.72**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0017**	**---**	**0.29**	**0.0075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**
Relative Percent Difference (RPD) Report																																		
AEMP-DS-02 (Marine Dock)	20-Jul-2024	Grab	**1.8** [#1]	< 0.00060	0.0020	0.086	< 0.0010	0.022	0.000093	39	0.0030	**0.0018** [#7]	**0.0043** [#1]	**3.3** [#1,7]	0.0020	< 0.026	12	0.055	0.0000068 [#4]	0.0010	0.0071	< 0.10	1.5	0.00037	3.3	< 0.00010	8.8	0.32	< 0.00020	< 0.0010	0.018	0.00091	0.0057	**0.035** [#1]
(Duplicate)	20-Jul-2024	Grab	**1.8** [#1]	< 0.00060	0.0018	0.086	< 0.0010	0.022	0.00010	39	0.0029	**0.0017** [#7]	**0.0043** [#1]	**3.4** [#1,7]	0.0018	< 0.026	12	0.054	0.0000057 [#4]	0.0012	0.0076	< 0.10	1.6	0.00035	3.4	< 0.00010	8.9	0.33	< 0.00020	< 0.0010	0.018	0.00093	0.0058	**0.040** [#1]
RPD(%)			**0.0%**	**---**	**10.5%**	**0.0%**	**---**	**0.0%**	**7.3%**	**0.0%**	**3.4%**	**5.7%**	**0.0%**	**3.0%**	**10.5%**	**---**	**0.0%**	**1.8%**	**17.6%**	**18.2%**	**6.8%**	**---**	**6.5%**	**5.6%**	**3.0%**	**---**	**1.1%**	**3.1%**	**---**	**---**	**0.0%**	**2.2%**	**1.7%**	**13.3%**
AEMP-DS-02 (Marine Dock)	16-Aug-2024	Grab	**3.4** [#1,2]	< 0.00060	**0.0031**	**0.17**	< 0.0010	0.025	**0.00022** [#1]	61	0.0049	**0.0035** [#7]	**0.0074** [#1]	**7.7** [#1,7]	**0.0043** [#1]	< 0.020	21	**0.18** [#2]	0.000013	**0.0017**	**0.011**	0.20	1.9	0.00047	5.7	< 0.00010	14	0.61	< 0.00020	< 0.0010	0.036	**0.0012**	0.0088	**0.058** [#1]
(Duplicate)	16-Aug-2024	Grab	**3.6** [#1,2]	< 0.00060	**0.0032**	**0.16**	< 0.0010	0.025	**0.00024** [#1]	60	0.0051	**0.0035** [#7]	**0.0076** [#1]	**7.4** [#1,7]	**0.0041** [#1]	< 0.020	21	**0.18** [#2]	0.000014	**0.0017**	**0.011**	0.20	2.0	0.00044	5.6	< 0.00010	14	0.58	< 0.00020	< 0.0010	0.035	**0.0012**	0.0092	**0.089** [#1]
RPD(%)			**5.7%**	**---**	**3.2%**	**6.1%**	**---**	**0.0%**	**8.7%**	**1.7%**	**4.0%**	**0.0%**	**2.7%**	**4.0%**	**4.8%**	**---**	**0.0%**	**0.0%**	**7.4%**	**0.0%**	**0.0%**	**0.0%**	**5.1%**	**6.6%**	**1.8%**	**---**	**0.0%**	**5.0%**	**---**	**---**	**2.8%**	**0.0%**	**4.4%**	**42.2%**
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	Grab	0.074	< 0.00060	0.00022	0.082	< 0.0010	0.040	< 0.000020	84	< 0.0010	< 0.00030	< 0.0010	0.18	< 0.00020	< 0.020	32	0.011	< 0.0000019	**0.0059**	0.00075	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
(Duplicate)	13-Sep-2024	Grab	0.059	< 0.00060	0.00023	0.084	< 0.0010	0.050	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.16	< 0.00020	< 0.020	33	0.011	< 0.0000019	0.0019	0.00061	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	0.0019	0.0011	< 0.0010	< 0.0030
RPD(%)			**22.6%**	**---**	**4.4%**	**2.4%**	**---**	**22.2%**	**---**	**2.4%**	**---**	**---**	**---**	**11.8%**	**---**	**---**	**3.1%**	**0.0%**	**---**	**102.6%**	**20.6%**	**---**	**0.0%**	**---**	**0.0%**	**---**	**0.0%**	**0.0%**	**---**	**---**	**---**	**8.7%**	**---**	**---**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1]denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life.
   http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)
   Lead guideline value for Mackenzie River = 0.0036. Lead guideline value for Bosworth Creek = 0.007. This guideline value is based on hardness for both rivers.
   Aluminum:
   Standard varies with pH.
   pH < 6.5 = 0.005 mg/L
   pH >= 6.5 = 0.1 mg/L
   Boron:
   Guideline based on long term exposure
   Cadmium:
   Guideline based on long term exposure
   Chromium (Total):
   Limit is for Chromium(III).
   Copper:
   Guideline is hardness dependent. Presented guideline set to lower limit.
   Lead:
   Guideline is hardness dependent. Presented guideline set to lower limit.
   Mercury:
   Guideline for Inorganic mercury
   Nickel:
   Guideline is hardness dependent. Presented guideline set to lower limit.
   Silver:
   Guideline based on long term exposure
   Uranium:
   Guideline based on long term exposure
7. Superscript [#2]denotes values exceeding
   (Health Canada. 2024. Guidelines for Canadian Drinking Water Quality. Summary Table. Maximum Acceptable Concentration.
   Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.
   August 2024.)
   Calcium:
   Guideline value not necessary. Calcium contributes to hardness.
   Chromium (Total):
   MAC established for total chromium to protect from Chromium (VI).
8. Superscript [#3] - Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
9. Superscript [#4] - Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.
10. Superscript [#5] - Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.
11. Superscript [#6] - Matrix spike exceeds acceptance limits due to probable matrix interference.
12. Superscript [#7] denotes values exceeding
    (ECCC. 2024. Federal Environmental Quality Guidelines Summary Table. Environment and Climate Change Canada, Ottawa, Ontario, November 2024.)

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			0.1	---	0.005	---	---	1.5	0.00017	---	0.0089	---	0.00257	0.3	0.00359	---	---	0.37	0.000026	0.073	0.1028	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.019
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			0.1	---	0.005	---	---	1.5	0.00037	---	0.0089	---	0.004	0.3	0.007	---	---	0.29	0.000026	0.073	0.1500	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.039
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			2.9	0.006	0.01	2	---	5	0.007	None required	0.05	---	2	---	0.005	---	---	0.12	0.001	---	---	---	---	0.05	---	---	---	7	---	---	---	0.02	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			0.76	---	---	---	---	---	---	---	0.005	0.0011	---	0.33	0.0059	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			0.72	---	---	---	---	---	---	---	0.005	0.0017	---	0.29	0.0075	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---

Chromium:
Guideline is based on chromium(VI)

Iron:
Guideline is DOC and pH dependent and presented guidelines are set based on 25th percentile of pH and DOC at upstream sites for each watercourse.

Lead:
Guideline is DOC and hardness dependent and presented guidelines are set based on 25th percentile of hardness and DOC at upstream sites for each watercourse.

Above UCL
Equal to UCL
Below LCL
Equal to LCL

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			0.1	---	0.005	---	---	1.5	0.00017	---	0.0089	---	0.00257	0.3	0.00359	---	---	0.37	0.000026	0.073	0.1028	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.019
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			0.1	---	0.005	---	---	1.5	0.00037	---	0.0089	---	0.004	0.3	0.007	---	---	0.29	0.000026	0.073	0.1500	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.039
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			2.9	0.006	0.01	2	---	5	0.007	None required	0.05	---	2	---	0.005	---	---	0.12	0.001	---	---	---	---	0.05	---	---	---	7	---	---	---	0.02	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			0.76	---	---	---	---	---	---	---	0.005	0.0011	---	0.33	0.0059	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			0.72	---	---	---	---	---	---	---	0.005	0.0017	---	0.29	0.0075	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
NW AEMP V5																																		
MACKENZIE RIVER																																		
Mackenzie Upstream Data UCL			3.39	---	0.0025	0.107	---	---	0.00016	---	0.0055	---	0.0067	5.2	---	---	---	---	---	0.0017	0.009	---	---	0.00067	---	---	---	---	---	---	---	0.0012	---	0.0260
Mackenzie Upstream Data LCL			<0.003	---	<0.0002	0.022	---	---	<0.00002	---	<0.0010	---	<0.0010	<0.060	---	---	---	---	---	0.0004	<0.0005	---	---	<0.00020	---	---	---	---	---	---	---	0.0004	---	<0.003
DOWNSTREAM																																		
AEMP-DS-02 (Marine Dock)	17-Aug-2017	Grab	0.65 [#1]	< 0.00060	0.0011	0.066	< 0.0010	< 0.020	0.000071	39	0.0011	0.00079	0.0025	1.2 [#1,7]	0.00077	< 0.020	12	0.031	0.0000038	0.0012	0.0037	< 0.10	1.1	0.00052	2.6	< 0.00010	7.3	0.25	< 0.00020	< 0.0010	0.011	0.00094	0.0032	0.011
	21-Aug-2017	Grab	0.50 [#1]	< 0.00060	0.00079	0.056	< 0.0010	< 0.020	0.000035	33	< 0.0010	0.00056	0.0020	0.98 [#1,7]	0.00054	< 0.020	10	0.024	0.0000026	0.00095	0.0027	< 0.10	1.1	0.00031	2.2	< 0.00010	8.3	0.24	< 0.00020	< 0.0010	0.011	0.00072	0.0019	0.0057
	16-Sep-2017	Grab	1.2 [#1,7]	< 0.00060	0.0015	0.085	< 0.0010	< 0.020	0.000092	39	0.0022	0.0016 [#7]	0.0037 [#1]	3.2 [#1,7]	0.0017	< 0.020	14	0.077	0.0000026	0.00095	0.0051	< 0.10	1.2	0.00026	3.0	< 0.00010	9.4	0.24	< 0.00020	< 0.0010	0.016	0.00074	0.0043	0.016
	16-Oct-2017	Grab	0.33 [#1]	< 0.00060	0.00056	0.048	< 0.0010	< 0.020	0.000029	31	< 0.0010	0.00039	0.0013	0.74 [#1,7]	0.00040	< 0.020	11	0.020	< 0.0000020	0.00077	0.0020	< 0.10	0.99	0.00033	2.1	< 0.00010	9.2	0.23	< 0.00020	< 0.0010	0.0069	0.00060	0.0026	0.0040
	23-Jun-2018	Grab	0.80 [#1,7]	< 0.00060	0.00098	0.063	< 0.0010	< 0.020	0.000066	31	0.0014	0.0011 [#7]	0.0031 [#1]	1.6 [#1,7]	0.00089	< 0.020	9.5	0.038	0.0000030	0.0011	0.0043	< 0.10	1.0	0.00028	2.3	< 0.00010	7.3	0.20	< 0.00020	< 0.0010	0.010	0.00073	0.0026	0.011
	13-Aug-2018	Grab	0.73 [#1]	< 0.00060	0.00083	0.057	< 0.0010	< 0.020	0.000087	35	< 0.0010	0.00072	0.0023	1.1 [#1,7]	0.00060	< 0.020	11	0.028	0.0000039	0.0010	0.0034	< 0.10	1.0	0.00034	2.6	< 0.00010	9.2	0.26	< 0.00020	< 0.0010	0.015	0.00074	0.0021	0.011
	17-Oct-2018	Grab	0.12 [#1]	< 0.00060	0.00029	0.041	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.00095	0.19	< 0.00020	< 0.020	10	0.0069	< 0.0000020	0.00075	0.0012	< 0.10	0.94	< 0.00020	1.6	< 0.00010	9.4	0.28	< 0.00020	< 0.0010	0.0020	0.00052	< 0.0010	< 0.0030
	03-Jun-2019	Grab	1.7 [#1,7]	< 0.00060	0.0017	0.086	< 0.0010	< 0.020	0.00012	37	0.0031	0.0021 [#7]	0.0048 [#1]	4.0 [#1,7]	0.0021	< 0.020	13	0.092	0.0000080	0.0012	0.0065	< 0.10	1.4	0.00039	3.7	< 0.00010	7.9	0.31	< 0.00020	< 0.0010	0.019	0.00076	0.0046	0.021 [#1]
	28-Aug-2019	Grab	0.59 [#1]	< 0.00060	0.00052	0.056	< 0.0010	< 0.020	0.000023	35	< 0.0010	0.00037	0.0015	0.86 [#1,7]	0.00042	< 0.020	11	0.018	< 0.0000020	0.00091	0.0018	< 0.10	1.1	0.00032	2.9	< 0.00010	8.8	0.29	< 0.00020	< 0.0010	0.015 [#3]	0.00069	0.0024	0.0044
	03-Oct-2019	Grab	0.38 [#1]	< 0.00060	0.00064	0.054	< 0.0010	< 0.020	0.000031	33	< 0.0010	0.00039	0.0015	0.87 [#1,7]	0.00041	< 0.020	10	0.015	0.0000020	0.00092	0.0023	< 0.10	1.1	0.00037	3.1	< 0.00010	8.9	0.27	< 0.00020	< 0.0010	0.0074	0.00060	0.0018	0.0051
	10-Jun-2020	Grab	3.7 [#1,2,7]	< 0.00060	0.0032	0.14	< 0.0010	< 0.020	0.00023 [#1]	35	0.0058 [#7]	0.003 [#7]	0.0074 [#1]	6.8 [#1,7]	0.0036 [#1]	< 0.020	10	0.13 [#2]	< 0.000019 [#4]	0.0013	0.0096	0.15	2.4	0.00043	13	< 0.00010	6.0	0.20	< 0.00020	< 0.0010	0.086	0.00092	0.011	0.030 [#1]
	24-Jul-2020	Grab	1.9 [#1,7]	< 0.00060	0.0013	0.074	< 0.0010	< 0.020	0.000063	34	0.0030	0.0013 [#7]	0.0035 [#1]	2.4 [#1,7]	0.0012 [#1]	< 0.020	9.9	0.047	< 0.000019 [#4]	0.00095	0.0040	0.10	1.1	0.00031	3.2	< 0.00010	6.7	0.20	< 0.00020	< 0.0010	0.044	0.00075	0.0051	0.012
	18-Sep-2020	Grab	0.58 [#1]	< 0.00060	0.00085	0.061	< 0.0010	< 0.020	0.000047	34	0.0012	0.00055	0.0037 [#1]	1.1 [#1,7]	0.00053	< 0.020	9.2	0.025	< 0.0000019	0.00094	0.0062	< 0.10	1.1	0.00029	3.7	< 0.00010	7.7	0.19	< 0.00020	0.0018	0.014	0.00087	0.0019	0.0060
	06-Jun-2021	Grab	3.4 [#1,2,7]	< 0.00060	0.0021	0.074	< 0.0010	< 0.020	0.00010	33	0.0057 [#7]	0.0016 [#7]	0.0041 [#1]	3.2 [#1,7]	0.0017 [#1]	< 0.020	9.5	0.065	0.0000053	0.0011	0.0059	< 0.10	1.6	0.00038	4.1	< 0.00010	6.7	0.17	< 0.00020	< 0.0010	0.15	0.00068	0.0086	0.018
	18-Aug-2021	Grab	4.4 [#1,2,7]	< 0.00060	0.0037	0.13	< 0.0010	< 0.020	0.00021 [#1]	39	0.0069 [#7]	0.0043 [#7]	0.010 [#1]	8.5 [#1,7]	0.0043 [#1]	< 0.020	13	0.15 [#2]	0.000013	0.0015	0.013	0.17	2.3	0.00049	6.9	< 0.00010	7.5	0.23	< 0.00020	< 0.0010	0.044	0.0010	0.013	0.095 [#1]
	17-Sep-2021	Grab	0.46 [#1]	< 0.00060	0.00061	0.049	< 0.0010	< 0.020	0.000030	33	0.0011	0.00042	0.0016	0.85 [#1,7]	0.00040	< 0.020	9.9	0.021	< 0.0000019	0.00086	0.0020	< 0.10	1.0	0.00030	2.6	< 0.00010	7.5	0.21	< 0.00020	< 0.0010	0.0083	0.00061	0.0019	< 0.0030
	31-Mar-2022	Grab	0.027	< 0.00060	0.00026	0.034	< 0.0010	< 0.020	0.000038	36	< 0.0010	< 0.00030	0.0021	0.061	0.0051 [#1,2]	< 0.020	10	0.0055	0.0000032	0.00055	0.0011	0.16	1.0	< 0.00020	1.6	< 0.00010	9.5	0.22	< 0.00020	< 0.0010	< 0.0010	0.00036	< 0.0010	0.023 [#1]
	12-Jun-2022	Grab	3.3 [#1,2,7]	< 0.00060	0.0036	0.13	< 0.0010	< 0.020	0.00027 [#1]	43	0.0057 [#7]	0.0040 [#7]	0.0095 [#1]	9.0 [#1,7]	0.0040 [#1]	< 0.020	11	0.16 [#2]	0.000023	0.0027	0.014	0.19	2.0	0.00073	6.1	< 0.00010	5.3	0.20	< 0.00020	< 0.0010	0.039	0.0011	0.010	0.10 [#1]
	06-Aug-2022	Grab	1.7 [#1,7]	< 0.00060	0.0019	0.11	< 0.0010	< 0.020	0.00014	39	0.0025	0.0018 [#7]	0.0048 [#1]	4.2 [#1,7]	0.0022	< 0.020	12	0.090	< 0.0000019	0.0012	0.0060	< 0.10	1.9	0.00036	7.1	< 0.00010	8.4	0.26	< 0.00020	< 0.0010	0.027	0.00077	0.0050	0.074 [#1]
	25-Sep-2022	Grab	0.49 [#1]	< 0.00060	0.00073	0.056	< 0.0010	< 0.020	0.000042	33	< 0.0010	< 0.00030	0.0020	1.0 [#1,7]	0.00054	< 0.020	11	0.024	< 0.0000019	0.00095	0.0023	< 0.10	1.2	0.00022	2.5	< 0.00010	8.7	0.22	< 0.00020	< 0.0010	0.014	0.00063	0.0021	0.0062
	09-Mar-2023	Grab	0.038	< 0.00060	0.00023	0.036	< 0.0010	< 0.020	0.000033	26	0.0011	< 0.00030	0.0013	< 0.060	0.00029	< 0.020	9.1	< 0.0040	< 0.0000019	0.00057	0.0012	< 0.10	0.85	< 0.00020	1.6	< 0.00010	8.8	0.21	< 0.00020	0.0013	< 0.0010	0.00047	0.0017	0.0042
	25-Jul-2023	Grab	0.61 [#1]	< 0.00060	0.00076	0.057	< 0.0010	< 0.020	0.000050	35	0.0011	0.00045	0.0020	0.59 [#1,7]	0.00045	< 0.020	10	0.017	< 0.0000019	0.0014	0.0023	< 0.10	1.0	0.00045	2.6	< 0.00010	8.9	0.25	< 0.00020	< 0.0010	0.014	0.0011	0.0020	0.0054
	18-Aug-2023	Grab	1.7 [#1,7]	< 0.00060	0.0012	0.081	< 0.0010	0.039	0.000089	36	0.0028	0.00097	0.0030 [#1]	2.1 [#1,7]	0.0011	< 0.020	11	0.042	0.0000044	0.0012	0.0042	< 0.10	1.5	0.00042	6.7	< 0.00010	8.4	0.24	< 0.00020	< 0.0010	0.051	0.00084	0.0053	0.012
	24-Sep-2023	Grab	0.16 [#1]	< 0.00060	0.00035	0.046	< 0.0010	< 0.020	< 0.000020	33	< 0.0010	< 0.00030	0.0011	0.23	< 0.00020	< 0.020	11	0.0099	< 0.0000019	0.00094	0.0011	< 0.10	0.92	0.00031	1.6	< 0.00010	9.1	0.26	< 0.00020	< 0.0010	0.0024	0.00069	< 0.0010	< 0.0030
	18-Mar-2024	Grab	0.024	< 0.00060	0.00029	0.042	< 0.0010	< 0.020	< 0.000020	30	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	9.7	< 0.0040	< 0.0000019	0.00088	0.0016	< 0.10	0.95	0.00023	1.7	< 0.00010	9.9	0.23	< 0.00020	< 0.0010	< 0.0010	0.00071	< 0.0010	0.0067
	20-Jul-2024	Grab	1.8 [#1,7]	< 0.00060	0.0020	0.086	< 0.0010	0.022	0.000093	39	0.0030	0.0018 [#7]	0.0043 [#1]	3.3 [#1,7]	0.0020	< 0.026	12	0.055	0.0000068 [#4]	0.0010	0.0071	< 0.10	1.5	0.00037	3.3	< 0.00010	8.8	0.32	< 0.00020	< 0.0010	0.018	0.00091	0.0057	0.035 [#1]
(Duplicate)	20-Jul-2024	Grab	1.8 [#1,7]	< 0.00060	0.0018	0.086	< 0.0010	0.022	0.00010	39	0.0029	0.0017 [#7]	0.0043 [#1]	3.4 [#1,7]	0.0018	< 0.026	12	0.054	0.0000057 [#4]	0.0012	0.0076	< 0.10	1.6	0.00035	3.4	< 0.00010	8.9	0.33	< 0.00020	< 0.0010	0.018	0.00093	0.0058	0.040 [#1]
	16-Aug-2024	Grab	3.4 [#1,2,7]	< 0.00060	0.0031	0.17	< 0.0010	0.025	0.00022 [#1]	61	0.0049	0.0035 [#7]	0.0074 [#1]	7.7 [#1,7]	0.0043 [#1]	< 0.020	21	0.18 [#2]	0.000013	0.0017	0.011	0.20	1.9	0.00047	5.7	< 0.00010	14	0.61	< 0.00020	< 0.0010	0.036	0.0012	0.0088	0.058 [#1]
(Duplicate)	16-Aug-2024	Grab	3.6 [#1,2,7]	< 0.00060	0.0032	0.16	< 0.0010	0.025	0.00024 [#1]	60	0.0051 [#7]	0.0035 [#7]	0.0076 [#1]	7.4 [#1,7]	0.0041 [#1]	< 0.020	21	0.18 [#2]	0.000014	0.0017	0.011	0.20	2.0	0.00044	5.6	< 0.00010	14	0.58	< 0.00020	< 0.0010	0.035	0.0012	0.0092	0.089 [#1]
	13-Sep-2024	Grab	0.16 [#1]	< 0.00060	0.00044	0.048	< 0.0010	< 0.020	0.000044	35	< 0.0010	< 0.00030	0.0013	0.16	< 0.00020	< 0.020	12	0.0066	< 0.0000019	0.0011	0.0019	< 0.10	0.96	0.00032	1.5	< 0.00010	9.4	0.30	< 0.00020	< 0.0010	0.0020	0.00087	< 0.0010	0.0051
AEMP-DS-03 (Island 3)	16-Sep-2017	Grab	0.52 [#1]	< 0.00060	0.00065	0.061	< 0.0010	< 0.020	0.000040	38	0.0010	0.00054	0.0020	0.88 [#1,7]	0.00048	< 0.020	11	0.022	< 0.0000020	0.0011	0.0029	< 0.10	1.1	0.00034	2.4	< 0.00010	9.4	0.23	< 0.00020	< 0.0010	0.0082	0.00083	0.0026	0.023 [#1]
	16-Oct-2017	Grab	0.33 [#1]	< 0.00060	0.00050	0.053	< 0.0010	< 0.020	0.000050	37	< 0.0010	0.00034	0.0017	0.50 [#1,7]	0.00034	< 0.020	11	0.015	< 0.0000020	0.0011	0.0026	< 0.10	1.1	0.00039	2.1	< 0.00010	9.1	0.24	< 0.00020	< 0.0010	0.0083	0.00080	0.0020	0.0045
	23-Jun-2018	Grab	1.5 [#1,7]	< 0.00060	0.0015	0.073	< 0.0010	< 0.020	0.00015	37	0.0028	0.0025 [#7]	0.0055 [#1]	2.3 [#1,7]	0.0016	< 0.020	11	0.054	0.0000049	0.0016	0.0086	< 0.10	1.2	0.00060	2.9	< 0.00010	6.4	0.17	< 0.00020	< 0.0010	0.018	0.0011	0.0040	0.026 [#1]
	14-Aug-2018	Grab	2.1 [#1,7]	< 0.00060	0.0016	0.099	< 0.0010	< 0.020	0.00042 [#1]	51	0.0022	0.0033 [#7]	0.0064 [#1]	3.3 [#1,7]	0.0023	< 0.020	15	0.13 [#2]	0.000010	0.0010	0.011	0.17	1.3	0.00048	4.3	< 0.00010	7.5	0.27	< 0.00020	< 0.0010	0.024	0.0011	0.0054	0.056 [#1]
	18-Oct-2018	Grab	0.45 [#1]	< 0.00060	0.00070	0.059	< 0.0010	< 0.020	0.000065	32	< 0.0010	0.00053	0.0021	1.0 [#1,7]	0.00063	< 0.020	10	0.028	0.0000047	0.00076	0.0025	< 0.10	1.1	0.00030	2.1	< 0.00010	9.4	0.22	< 0.00020	< 0.0010	0.0079	0.00057	0.0016	0.0070
	10-Jun-2019	Grab	2.1 [#1,7]	0.00094	0.0023	0.10	< 0.0010	< 0.020	0.00015	39	0.0038	0.0024 [#7]	0.0078 [#1]	5.0 [#1,7]	0.0026	< 0.020	11	0.11	0.0000089	0.0013	0.0087	0.11	1.6	0.00045	4.2	< 0.00010	6.3	0.19	< 0.00020	< 0.0010	0.028	0.00086	0.0059	0.045 [#1]
	26-Aug-2019	Grab	1.9 [#1,7]	< 0.00060	0.0011	0.077	< 0.0010	< 0.020	0.000084	42	0.0028	0.0012 [#7]	0.0034 [#1]	2.2 [#1,7]	0.0010	< 0.020	12	0.040	0.0000033	0.0011	0.0049	< 0.10	1.5	0.00062	5.5	< 0.00010	8.3	0.27	< 0.00020	< 0.0010	0.086	0.0011	0.0055	0.013
	01-Oct-2019	Grab	2.0 [#1,7]	< 0.00060	0.0017	0.11	< 0.0010	< 0.020	0.00012	39	0.0037	0.0015 [#7]	0.0050 [#1]	3.4 [#1,7]	0.0018	< 0.020	12	0.047	0.0000074	0.0014	0.0066	< 0.10	1.5	0.00061	3.3	< 0.00010	9.2	0.25	< 0.00020	< 0.0010	0.037	0.00097	0.0060	0.017
	12-Jun-2020	Grab	5.3 [#1,2,7]	< 0.00060	0.0050 [#1]	0.19	< 0.0010	< 0.020	0.00036 [#1]	51	0.0089 [#1,7]	0.0060 [#7]	0.013 [#1]	12 [#1,7]	0.0061 [#1,2,7]	< 0.020	15	0.22 [#2]	0.000021 [#4]	0.0018	0.020	0.24	2.3	0.00066	8.8	< 0.00010	5.2	0.24	< 0.00020	< 0.0010	0.045	0.0012	0.014	0.078 [#1]
	28-Jul-2020	Grab	1.7 [#1,7]	< 0.00060	0.0020	0.11	< 0.0010	< 0.020	0.00020 [#1]	44	0.0074 [#7]	0.0021 [#7]	0.0060 [#1]	3.6 [#1,7]	0.0021	< 0.020	12	0.086	0.000020 [#4]	0.0013	0.0079	< 0.10	1.1	0.00062	3.7	< 0.00010	6.0	0.21	< 0.00020	< 0.0010	0.029	0.00098	0.0056	0.025 [#1]
	22-Sep-2020	Grab	0.86 [#1,7]	0.0019	0.00092	0.061	< 0.0010	< 0.020	0.000074	40	0.0012	0.00065	0.0026 [#1]	1.3 [#1,7]	0.00066	< 0.020	11	0.029	0.000026 [#1,4]	0.0011	0.0044	< 0.10	1.2	0.00036	3.3	< 0.00010	7.3	0.21	< 0.00020	< 0.0010	0.019	0.00090	0.0042	0.0076
	07-Jun-2021	Grab	3.4 [#1,2,7]	< 0.00060	0.0022	0.10	< 0.0010	< 0.020	0.00019 [#1]	39	0.0059 [#7]	0.0022 [#7]	0.0059 [#1]	3.8 [#1,7]	0.0022	< 0.020	11	0.088	0.0000048	0.0012	0.0089	0.11	1.6	0.00051	3.9	< 0.00010	6.2	0.18	< 0.00020	< 0.0010	0.084	0.00098	0.0091	0.029 [#1]
(Duplicate)	07-Jun-2021	Grab	3.7 [#1,2,7]	< 0.00060	0.0021	0.098	< 0.0010	< 0.020	0.00014	37	0.0067 [#7]	0.0020 [#7]	0.0061 [#1]	3.3 [#1,7]	0.0021	< 0.020	10	0.075	< 0.0000019	0.0011	0.0084	< 0.10	1.5	0.00054	3.7	< 0.00010	6.2	0.18	< 0.00020	< 0.0010	0.091	0.00092	0.0087	0.026 [#1]
	19-Aug-2021	Grab	3.9 [#1,2,7]	< 0.00060	0.0032	0.14	< 0.0010	0.022	0.00023 [#1]	46	0.0062 [#7]	0.0039 [#7]	0.0091 [#1]	8.5 [#1,7]	0.0035	< 0.020	14	0.16 [#2]	0.0000042	0.0014	0.013	0.17	2.1	0.00046	6.4	< 0.00010	6.6	0.23	< 0.00020	< 0.0010	0.041	0.00094	0.010	0.083 [#1]
	18-Sep-2021	Grab	1.2 [#1,7]	0.00063	0.0015	0.071	< 0.0010	< 0.020	0.00013	38	0.0028	0.0013 [#7]	0.0041 [#1]	2.4 [#1,7]	0.0013	< 0.020	11	0.048	0.0000031	0.0012	0.0060	< 0.10	1.3	0.00043	3.4	< 0.00010	7.5	0.22	< 0.00020	< 0.0010	0.018	0.00091	0.0042	0.092 [#1]
	31-Mar-2022	Grab	0.10 [#1]	< 0.00060	0.00047	0.059	< 0.0010	< 0.020	0.000024	42	< 0.0010	< 0.00030	0.0023	0.67 [#1,7]	< 0.00020	< 0.020	12	0.012	0.0000022	0.0011	0.0015	< 0.10	1.3	0.00037	2.9	< 0.00010	12	0.27	< 0.00020	< 0.0010	0.0020	0.00081	< 0.0010	< 0.0030
	14-Jun-2022	Grab	7.9 [#1,2,7]	< 0.00060	0.0068 [#1]	0.24	< 0.0010	< 0.020	0.00050 [#1]	55	0.013 [#1,7]	0.0087 [#7]	0.019 [#1]	16 [#1,7]	0.0082 [#1,2,7]	< 0.020	16	0.34 [#2]	0.000034 [#1]	0.0018	0.026	0.33	2.4	0.00081	9.0	< 0.00010	4.0	0.20	< 0.00020	< 0.0010	0.14	0.0013	0.024	0.087 [#1]
	06-Aug-2022	Grab	0.97 [#1,7]	< 0.00060	0.0012	0.085	< 0.0010	< 0.020	0.000074	41	0.0018	0.00097	0.0033 [#1]	2.3 [#1,7]	0.0011	< 0.020	12	0.051	0.0000068	0.0012	0.0041	< 0.10	1.6	0.00046	5.3	< 0.00010	7.6	0.23	< 0.00020	< 0.0010	0.014	0.00081	0.0029	0.080 [#1]
(Duplicate)	06-Aug-2022	Grab	0.95 [#1,7]	< 0.00060	0.0012	0.086	< 0.0010	< 0.020	0.000089	41	0.0015	0.00094	0.0031 [#1]	2.3 [#1,7]	0.0011	< 0.020	12	0.050	0.0000055	0.0012	0.0041	< 0.10	1.6	0.00046	5.7	< 0.00010	7.7	0.23	< 0.00020	< 0.0010	0.016	0.00084	0.0030	0.064 [#1]

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00017**	---	**0.0089**	---	**0.00257**	**0.3**	**0.00359**	---	---	**0.37**	**0.000026**	**0.073**	**0.1028**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.019**
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00037**	---	**0.0089**	---	**0.004**	**0.3**	**0.007**	---	---	**0.29**	**0.000026**	**0.073**	**0.1500**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.039**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	---	**5**	**0.007**	**None required**	**0.05**	---	**2**	---	**0.005**	---	---	**0.12**	**0.001**	---	---	---	---	**0.05**	---	---	---	**7**	---	---	---	**0.02**	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			**0.76**	---	---	---	---	---	---	---	**0.005**	**0.0011**	---	**0.33**	**0.0059**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			**0.72**	---	---	---	---	---	---	---	**0.005**	**0.0017**	---	**0.29**	**0.0075**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
	25-Sep-2022	Grab	**0.46** [#1]	< 0.00060	0.00067	0.057	< 0.0010	< 0.020	0.000047	39	< 0.0010	< 0.00030	0.0022	**0.71** [#1,7]	0.00045	< 0.020	9.9	0.020	< 0.0000019	0.0011	0.0025	< 0.10	1.2	0.00040	3.0	< 0.00010	8.9	0.22	< 0.00020	< 0.0010	0.011	0.00076	0.0015	0.0050
	09-Mar-2023	Grab	**0.17** [#1]	< 0.00060	0.00091	0.069	< 0.0010	< 0.020	0.000097	45	**0.040** [#1,7]	0.00055	**0.0036** [#1]	**0.47** [#1,7]	0.00063	< 0.020	12	0.011	< 0.0000019	**0.0027**	**0.022**	< 0.10	1.2	**0.00067**	2.5	< 0.00010	14	0.32	< 0.00020	< 0.0010	0.0026	**0.0013**	< 0.0010	0.0090
	25-Jul-2023	Grab	**0.88** [#1,7]	< 0.00060	0.00080	0.064	< 0.0010	< 0.020	0.000054	41	0.0013	0.00051	0.0020	**1.0** [#1,7]	0.00054	< 0.020	12	0.026	< 0.0000019	0.0011	0.0026	< 0.10	1.2	0.00046	3.5	< 0.00010	8.0	0.24	< 0.00020	< 0.0010	0.024	0.00092	0.0020	0.0072
	19-Aug-2023	Grab	**2.0** [#1,7]	< 0.00060	0.0013	0.087	< 0.0010	< 0.020	0.00010	44	0.0027	0.0010	**0.0037** [#1]	**2.2** [#1,7]	0.0012	< 0.020	12	0.045	0.000012	0.0013	0.0046	< 0.10	1.5	0.00056	5.0	< 0.00010	8.1	0.25	< 0.00020	< 0.0010	0.079	0.0011	0.0052	0.016
	25-Sep-2023	Grab	**0.23** [#1]	< 0.00060	0.00031	0.059	< 0.0010	< 0.020	0.000038	42	< 0.0010	< 0.00030	0.0013	**0.32** [#1]	< 0.00020	< 0.020	13	0.011	< 0.0000019	0.0011	0.0017	< 0.10	1.0	0.00040	2.2	< 0.00010	9.9	0.28	< 0.00020	< 0.0010	0.0031	0.00087	< 0.0010	< 0.0030
	18-Mar-2024	Grab	0.059	< 0.00060	0.00036	0.064	< 0.0010	< 0.020	0.000023	45	< 0.0010	< 0.00030	0.0016	0.078	< 0.00020	< 0.020	12	< 0.0040	< 0.0000019	0.0013	0.0018	< 0.10	1.2	0.00047	2.3	< 0.00010	15	0.33	< 0.00020	< 0.0010	0.0027	0.0011	< 0.0010	0.0045
	19-Jul-2024	Grab	**4.8** [#1,2,7]	< 0.00060	**0.0049**	**0.15**	< 0.0010	0.023	**0.00027** [#1]	47	**0.0077** [#7]	**0.0051** [#7]	**0.010** [#1]	**9.9** [#1,7]	**0.0050** [#1,2]	< 0.026	14	**0.16** [#2]	< 0.0000019	0.0016	**0.017**	0.18	2.2	0.00065	6.4	< 0.00010	6.9	0.26	< 0.00020	< 0.0010	0.041	**0.0012**	0.014	**0.066** [#1]
	15-Aug-2024	Grab	**1.7** [#1,7]	< 0.00060	0.0011	0.089	< 0.0010	0.021	0.000085	45	0.0023	**0.0012** [#7]	**0.0031** [#1]	**2.1** [#1,7]	0.0013	< 0.020	13	0.046	< 0.0000019	0.0013	0.0046	< 0.10	1.7	0.00054	6.0	< 0.00010	8.5	0.27	< 0.00020	< 0.0010	0.035	0.0011	0.0042	0.012
	17-Sep-2024	Grab	**0.80** [#1,7]	< 0.00060	0.00079	0.071	< 0.0010	0.025	0.00011	47	0.0011	0.00076	**0.0026** [#1]	**0.95** [#1,7]	0.00055	< 0.020	13	0.026	< 0.0000019	0.0013	0.0048	< 0.10	1.3	0.00048	3.3	< 0.00010	9.4	0.30	< 0.00020	< 0.0010	0.020	0.0011	0.0032	0.014
AEMP-DS-04 (Refinery)	21-Aug-2017	Grab	**0.62** [#1]	< 0.00060	0.00083	0.058	< 0.0010	< 0.020	0.000060	33	0.0011	0.00069	0.0023	**1.2** [#1,7]	0.00063	< 0.020	10	0.029	0.0000024	0.00097	0.0030	< 0.10	1.1	0.00034	2.4	< 0.00010	8.1	0.23	< 0.00020	< 0.0010	0.0089	0.00074	0.0022	0.0082
(Duplicate)	21-Aug-2017	Grab	**0.67** [#1]	< 0.00060	0.00093	0.059	< 0.0010	< 0.020	0.000053	33	0.0013	0.00077	0.0025	**1.3** [#1,7]	0.00074	< 0.020	11	0.031	0.0000026	0.0010	0.0032	< 0.10	1.1	0.00038	2.4	< 0.00010	8.2	0.23	< 0.00020	< 0.0010	0.011	0.00079	0.0024	0.0078
	16-Sep-2017	Grab	**0.28** [#1]	< 0.00060	0.00056	0.047	< 0.0010	< 0.020	0.000028	30	< 0.0010	0.00034	0.0013	**0.67** [#1,7]	0.00039	< 0.020	10	0.018	< 0.0000020	0.00076	0.0018	< 0.10	0.89	< 0.00020	1.9	< 0.00010	9.0	0.20	< 0.00020	< 0.0010	0.0038	0.00057	0.0017	0.0042
	16-Oct-2017	Grab	**0.54** [#1]	< 0.00060	0.00086	0.056	< 0.0010	< 0.020	0.000057	29	0.0010	0.00050	0.0020	**0.80** [#1,7]	0.00058	< 0.020	10	0.048	< 0.0000020	0.00095	0.0026	< 0.10	1.1	0.00028	1.9	< 0.00010	8.8	0.22	< 0.00020	< 0.0010	0.023	0.00075	0.0038	0.0064
	23-Jun-2018	Grab	**1.1** [#1,7]	< 0.00060	0.0013	0.060	< 0.0010	< 0.020	0.000098	29	0.0022	**0.0015** [#7]	**0.0042** [#1]	**1.6** [#1,7]	0.0014	< 0.020	8.9	0.038	0.0000033	0.0014	0.0059	< 0.10	1.1	0.00042	2.4	< 0.00010	7.2	0.16	< 0.00020	< 0.0010	0.017	0.00094	0.0040	0.014
	13-Aug-2018	Grab	**1.4** [#1,7]	< 0.00060	0.0018	0.093	< 0.0010	< 0.020	**0.00017** [#1]	39	0.0019	**0.0017** [#7]	**0.0044** [#1]	**3.0** [#1,7]	0.0019	< 0.020	12	0.079	0.000010	0.00098	0.0060	0.12	1.2	0.00040	3.2	< 0.00010	9.0	0.23	< 0.00020	< 0.0010	0.019	0.00081	0.0043	**0.021** [#1]
	17-Oct-2018	Grab	**0.34** [#1]	< 0.00060	0.00060	0.052	< 0.0010	< 0.020	0.000040	28	< 0.0010	0.00042	0.0018	**0.66** [#1,7]	0.00047	< 0.020	9.1	0.024	< 0.0000020	0.00091	0.0020	< 0.10	1.0	< 0.00020	2.1	< 0.00010	9.5	0.21	< 0.00020	< 0.0010	0.013	0.00059	< 0.0010	0.0039
(Duplicate)	17-Oct-2018	Grab	**0.34** [#1]	< 0.00060	0.00046	0.053	< 0.0010	< 0.020	0.000038	28	< 0.0010	0.00040	0.0015	**0.72** [#1,7]	0.00047	< 0.020	9.2	0.026	< 0.0000020	0.00078	0.0020	< 0.10	1.0	< 0.00020	2.2	< 0.00010	9.7	0.21	< 0.00020	< 0.0010	0.0069	0.00054	< 0.0010	0.0038
	03-Jun-2019	Grab	**3.5** [#1,2,7]	< 0.00060	**0.0028**	**0.11**	< 0.0010	< 0.020	0.00015	37	**0.0062** [#7]	**0.0036** [#7]	**0.0083** [#1]	**7.5** [#1,7]	0.0034	< 0.020	12	**0.15** [#2]	0.000013	0.0014	**0.012**	0.15	1.9	0.00031	5.5	< 0.00010	9.8	0.20	< 0.00020	< 0.0010	0.12	0.00088	0.0096	**0.035** [#1]
	25-Aug-2019	Grab	**0.81** [#1,7]	< 0.00060	0.00061	0.051	< 0.0010	< 0.020	0.000028	31	0.0011	0.00047	0.0017	**0.89** [#1,7]	0.00046	< 0.020	9.9	0.018	< 0.0000020	0.00082	0.0024	< 0.10	1.1	0.00035	3.0	< 0.00010	8.3	0.22	< 0.00020	< 0.0010	0.013	0.00065	0.0017	0.0060
	03-Oct-2019	Grab	**4.6** [#1,2,7]	< 0.00060	**0.0062** [#1]	**0.34**	< 0.0010	0.021	**0.00048** [#1]	70	**0.0093** [#1,7]	**0.0069** [#7]	**0.014** [#1]	**16** [#1,7]	**0.0077** [#1,2,7]	< 0.020	24	**0.36** [#2]	0.000021	**0.0019**	**0.021**	0.51	2.2	0.00063	9.0	< 0.00010	8.6	0.27	< 0.00020	< 0.0010	0.059	**0.0012**	0.015	**0.072** [#1]
	10-Jun-2020	Grab	**4.3** [#1,2,7]	< 0.00060	**0.0034**	**0.13**	< 0.0010	< 0.020	**0.00024** [#1]	35	**0.0070** [#7]	**0.0034** [#7]	**0.0081** [#1]	**7.1** [#1,7]	**0.0040** [#1]	< 0.020	11	**0.14** [#2]	0.000020 [#4]	0.0015	**0.011**	0.17	1.6	0.00050	5.0	< 0.00010	6.0	0.20	< 0.00020	< 0.0010	0.11	0.00092	0.013	**0.033** [#1]
	24-Jul-2020	Grab	**1.8** [#1,7]	< 0.00060	0.0014	0.073	< 0.0010	< 0.020	0.000087	34	0.0033	0.00092	**0.0036** [#1]	**2.6** [#1,7]	0.0015	< 0.020	9.7	0.051	< 0.000019 [#4]	0.00096	0.0047	< 0.10	1.1	0.00040	3.2	< 0.00010	6.5	0.19	< 0.00020	< 0.0010	0.038	0.00072	0.0056	0.0091
(Duplicate)	24-Jul-2020	Grab	**2.0** [#1,7]	< 0.00060	0.0013	0.075	< 0.0010	< 0.020	0.00012	34	0.0032	**0.0011** [#7]	**0.0034** [#1]	**2.6** [#1,7]	0.0014	< 0.020	10	0.051	< 0.000019 [#4]	0.0012	0.0049	< 0.10	1.1	0.00039	3.2	< 0.00010	6.6	0.20	< 0.00020	< 0.0010	0.039	0.00072	0.0048	0.0094
	18-Sep-2020	Grab	**0.60** [#1]	< 0.00060	0.00069	0.060	< 0.0010	< 0.020	0.000037	34	0.0012	0.00043	0.0023	**1.0** [#1,7]	0.00046	< 0.020	9.0	0.024	< 0.0000019	0.00075	0.0027	< 0.10	1.1	0.00027	3.0	< 0.00010	7.4	0.18	< 0.00020	0.0012	0.046	0.00063	0.0017	0.0053
(Duplicate)	18-Sep-2020	Grab	**0.53** [#1]	< 0.00060	0.00070	0.058	< 0.0010	< 0.020	0.000055	34	0.0013	0.00057	**0.0039** [#1]	**0.98** [#1,7]	0.00060	< 0.020	9.1	0.024	< 0.0000019	0.0010	0.0033	< 0.10	1.2	0.00023	2.7	< 0.00010	7.7	0.18	< 0.00020	0.0061	0.014	**0.0012**	0.0019	0.0056
	06-Jun-2021	Grab	**3.2** [#1,2,7]	< 0.00060	0.0021	0.079	< 0.0010	< 0.020	0.00011	33	**0.0057** [#7]	**0.0016** [#7]	**0.0045** [#1]	**3.5** [#1,7]	0.0017	< 0.020	9.6	0.069	0.0000060	0.00099	0.0064	< 0.10	1.6	0.00042	4.3	< 0.00010	6.6	0.17	< 0.00020	< 0.0010	0.082	0.00065	0.010	**0.020** [#1]
	18-Aug-2021	Grab	**4.5** [#1,2,7]	< 0.00060	**0.0037**	**0.13**	< 0.0010	< 0.020	**0.00020** [#1]	39	**0.0073** [#7]	**0.0042** [#7]	**0.010** [#1]	**8.5** [#1,7]	**0.0043** [#1]	< 0.020	12	**0.15** [#2]	0.000012	0.0016	**0.015**	0.17	2.3	0.00041	7.2	< 0.00010	7.3	0.22	< 0.00020	< 0.0010	0.041	0.0010	0.013	**0.088** [#1]
	17-Sep-2021	Grab	**0.63** [#1]	< 0.00060	0.00083	0.053	< 0.0010	< 0.020	0.000048	33	0.0014	0.00048	0.0022	**1.2** [#1,7]	0.00062	< 0.020	9.6	0.028	< 0.0000019	0.00087	0.0024	< 0.10	1.1	0.00030	3.0	< 0.00010	7.1	0.18	< 0.00020	< 0.0010	0.014	0.00068	0.0026	0.0040
	12-Jun-2022	Grab	**5.1** [#1,2,7]	< 0.00060	**0.0067** [#1]	**0.18**	< 0.0010	< 0.020	**0.00045** [#1]	44	**0.0091** [#1,7]	**0.0066** [#7]	**0.015** [#1]	**14** [#1,7]	**0.0069** [#1,2,7]	< 0.020	13	**0.25** [#2]	**0.000032** [#1]	**0.0068**	**0.023**	0.28	2.4	**0.00095**	8.0	< 0.00010	6.1	0.19	0.00030	< 0.0010	0.055	**0.0019**	0.017	**0.16** [#1]
	06-Aug-2022	Grab	**8.5** [#1,2,7]	< 0.00060	**0.0093** [#1]	**0.39**	< 0.0010	0.023	**0.00071** [#1]	75	**0.014** [#1,7]	**0.010** [#7]	**0.021** [#1]	**24** [#1,7]	**0.012** [#1,2,7]	< 0.020	23	**0.53** [#1,2]	< 0.0000019	**0.0025**	**0.030**	0.61	3.1	**0.00099**	12	0.00015	8.1	0.29	< 0.00020	< 0.0010	0.089	**0.0016**	0.026	**0.17** [#1]
(Duplicate)	06-Aug-2022	Grab	**7.7** [#1,2,7]	< 0.00060	**0.0083** [#1]	**0.37**	< 0.0010	0.022	**0.00066** [#1]	73	**0.013** [#1,7]	**0.0096** [#7]	**0.019** [#1]	**21** [#1,7]	**0.011** [#1,2,7]	< 0.020	22	**0.49** [#1,2]	< 0.0000019	**0.0023**	**0.028**	0.57	2.9	**0.00092**	11	0.00012	8.0	0.28	< 0.00020	< 0.0010	0.079	**0.0016**	0.023	**0.16** [#1]
	24-Sep-2022	Grab	**3.8** [#1,2,7]	< 0.00060	**0.0045**	**0.16**	< 0.0010	< 0.020	**0.00033** [#1]	45	**0.0070** [#7]	**0.0044** [#7]	**0.013** [#1]	**8.6** [#1,7]	**0.0050** [#1,2]	< 0.020	13	**0.22** [#2]	0.000020	0.0016	**0.014**	0.19	2.0	0.00057	5.9	< 0.00010	8.2	0.21	< 0.00020	< 0.0010	0.054	0.0011	0.012	**0.086** [#1]
(Duplicate)	24-Sep-2022	Grab	**3.8** [#1,2,7]	< 0.00060	**0.0046**	**0.17**	< 0.0010	0.021	**0.00035** [#1]	47	**0.0071** [#7]	**0.0047** [#7]	**0.014** [#1]	**8.9** [#1,7]	**0.0052** [#1,2]	< 0.020	14	**0.23** [#2]	**0.000029** [#1]	**0.0017**	**0.019**	0.21	2.0	0.00058	6.1	< 0.00010	8.4	0.22	< 0.00020	< 0.0010	0.053	0.0011	0.012	**0.081** [#1]
	11-Mar-2023	Grab	0.02	< 0.00060	0.00022	0.035	< 0.0010	0.025	0.000026	25	< 0.0010	< 0.00030	0.0018	< 0.060	< 0.00020	< 0.020	8.9	< 0.0040	< 0.0000019	0.00060	0.00071	< 0.10	0.79	0.00022	1.5	< 0.00010	8.3	0.22	< 0.00020	< 0.0010	< 0.0010	0.00044	< 0.0010	< 0.0030
	26-Jul-2023	Grab	**0.40** [#1]	< 0.00060	0.00063	0.054	< 0.0010	< 0.020	0.000031	36	< 0.0010	0.00030	0.0018	**0.55** [#1,7]	0.00031	< 0.020	10	0.017	< 0.0000019	0.0011	0.0016	< 0.10	1.0	0.00033	2.4	< 0.00010	8.4	0.22	< 0.00020	< 0.0010	0.0078	0.00076	0.0010	0.0047
(Duplicate)	26-Jul-2023	Grab	**0.45** [#1]	< 0.00060	0.00054	0.055	< 0.0010	< 0.020	0.000037	36	< 0.0010	0.00036	0.0014	**0.63** [#1,7]	0.00045	< 0.020	11	0.018	< 0.0000019	0.00099	0.0018	< 0.10	1.1	0.00032	2.5	< 0.00010	8.5	0.23	< 0.00020	< 0.0010	0.0063	0.00075	0.0011	0.0042
	18-Aug-2023	Grab	**1.9** [#1,7]	< 0.00060	0.0014	0.087	< 0.0010	< 0.020	0.000095	36	0.0031	**0.0011** [#7]	**0.0036** [#1]	**2.4** [#1,7]	0.0014	< 0.020	11	0.051	0.0000057	0.0012	0.0047	< 0.10	1.5	0.00045	5.6	< 0.00010	8.0	0.23	< 0.00020	< 0.0010	0.056	0.00090	0.0059	0.013
	24-Sep-2023	Grab	**0.30** [#1]	< 0.00060 [#5]	0.00044	0.055	< 0.0010	< 0.020	0.000032	33	< 0.0010	0.00034	0.0013	**0.55** [#1,7]	< 0.00020	< 0.020	10	0.015	< 0.0000019	0.00098	0.0016	< 0.10	1.1	0.00028	1.8	< 0.00010	8.9	0.23	< 0.00020	< 0.0010	0.0065	0.00075	< 0.0010	0.0041
	18-Mar-2024	Grab	0.023	< 0.00060	0.00037	0.042	< 0.0010	< 0.020	0.000025	30	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	9.6	< 0.0040	< 0.0000019	0.00084	0.0010	< 0.10	0.91	0.00021	1.8	< 0.00010	9.6	0.23	< 0.00020	< 0.0010	< 0.0010	0.00068	< 0.0010	0.0055
	20-Jul-2024	Grab	**1.2** [#1,7]	< 0.00060	0.0012	0.071	< 0.0010	< 0.020	0.000064	34	0.0018	**0.0011** [#7]	**0.0029** [#1]	**2.2** [#1,7]	0.0011	< 0.020	10	0.036	0.0000046	0.00099	0.0048	< 0.10	1.3	0.00035	2.9	< 0.00010	7.3	0.22	< 0.00020	< 0.0010	0.011	0.00084	0.0040	**0.030** [#1]
	16-Aug-2024	Grab	**3.0** [#1,2,7]	< 0.00060	**0.0029**	**0.16**	< 0.0010	< 0.020	**0.00021** [#1]	47	0.0043	**0.0031** [#7]	**0.0064** [#1]	**6.9** [#1,7]	0.0035	< 0.020	15	**0.16** [#2]	0.000020 [#4]	0.0015	**0.0096**	0.20	1.7	0.00048	5.1	< 0.00010	8.0	0.25	< 0.00020	< 0.0010	0.033	0.0010	0.0078	**0.056** [#1,3]
	13-Sep-2024	Grab	**0.19** [#1]	< 0.00060	0.00044	0.045	< 0.0010	< 0.020	0.000066	32	< 0.0010	< 0.00030	0.0015	0.12	0.00027	< 0.020	10	0.0052	< 0.0000019	0.0013	0.0024	< 0.10	0.92	0.00044	1.4	< 0.00010	8.0	0.22	< 0.00020	< 0.0010	0.0035	0.0010	< 0.0010	0.0053
AEMP-DS-05 (Radar North)	23-Jun-2018	Grab	**0.88** [#1,7]	< 0.00060	0.00099	0.066	< 0.0010	< 0.020	0.000085	32	0.0019	**0.0014** [#7]	**0.0036** [#1]	**1.7** [#1,7]	0.0010	< 0.020	9.3	0.042	0.0000036	0.00095	0.0049	< 0.10	1.1	0.00036	2.6	< 0.00010	6.6	0.16	< 0.00020	< 0.0010	0.018	0.00079	0.0028	0.011
	14-Aug-2018	Grab	**1.2** [#1,7]	< 0.00060	0.00086	0.065	< 0.0010	< 0.020	0.00013	37	0.0012	**0.0013** [#7]	**0.0029** [#1]	**1.5** [#1,7]	0.00097	< 0.020	11	0.043	0.0000043	0.00092	0.0044	< 0.10	1.2	0.00036	3.3	< 0.00010	7.6	0.22	< 0.00020	< 0.0010	0.017	0.00080	0.0031	0.016
	18-Oct-2018	Grab	**1.0** [#1,7]	< 0.00060	0.0011	0.071	< 0.0010	< 0.020	0.000071	32	0.0018	**0.0011** [#7]	**0.0031** [#1]	**2.1** [#1,7]	0.0012	< 0.020	11	0.049	0.0000038	0.00089	0.0040	< 0.10	1.2	0.00031	2.5	< 0.00010	9.9	0.27	< 0.00020	< 0.0010	0.016	0.00059	0.0035	0.012
	10-Jun-2019	Grab	**2.1** [#1,7]	0.00098	0.0023	0.10	< 0.0010	< 0.020	**0.00016** [#1]	38	0.0038	**0.0027** [#7]	**0.0079** [#1]	**5.4** [#1,7]	0.0028	< 0.020	11	**0.12** [#2]	0.0000092	0.0012	0.0086	0.13	1.6	0.00040	4.2	< 0.00010	6.4	0.18	< 0.00020	< 0.0010	0.032	0.00076	0.0063	**0.038** [#1]
	26-Aug-2019	Grab	**1.5** [#1,7]	< 0.00060	0.0010	0.074	< 0.0010	< 0.020	0.000063	39	0.0025	**0.0011** [#7]	**0.0031** [#1]	**2.1** [#1,7]	0.00098	< 0.020	11	0.039	0.0000036	0.0011	0.0046	< 0.10	1.4	0.00047	5.0	< 0.00010	8.0	0.24	< 0.00020	< 0.0010	0.043	0.0011	0.0050	0.0096
	01-Oct-2019	Grab	**1.6** [#1,7]	0.0015	0.0018	**0.11**	< 0.0010	0.023	0.00014	36	0.0028	**0.0025** [#7]	**0.0078** [#1]	**6.7** [#1,7]	0.0025	< 0.020	11	0.086	0.0000092	0.0014	**0.0090**	0.10	1.7	0.00048	3.9	< 0.00010	9.8	0.24	< 0.00020	< 0.0010	0.020	0.00098	0.0048	**0.044** [#1]
	12-Jun-2020	Grab	**8.1** [#1,2,7]	< 0.00060	**0.0081** [#1]	**0.33**	< 0.0010	< 0.020	**0.00062** [#1]	69	**0.014** [#1,7]	**0.0094** [#7]	**0.021** [#1]	**21** [#1,7]	**0.011** [#1,2,7]	< 0.020	21	**0.41** [#1,2]	< 0.000019 [#4]	**0.0025**	**0.031**	0.50	2.5	**0.00074**	12	0.00013	5.6	0.27	< 0.00020	< 0.0010	0.074	**0.0015**	0.023	**0.11** [#1]
	28-Jul-2020	Grab	**1.3** [#1,7]	< 0.00060	0.0014	0.072	< 0.0010	0.021	0.000097	36	0.0037	**0.0012** [#7]	**0.0045** [#1]	**2.3** [#1,7]	0.0012	< 0.020	9.8	0.049	< 0.000019 [#4]	0.0013	0.0061	< 0.10	1.1	0.00052	3.2	0.00014	6.1	0.18	< 0.00020	< 0.0010	0.017	0.00089	0.0048	0.012
	22-Sep-2020	Grab	**0.67** [#1]	0.0020	0.00094	0.058	< 0.0010	< 0.020	0.000056	36	< 0.0010	0.00063	0.0022	**1.2** [#1,7]	0.00067	< 0.020	9.7	0.031	0.0000022	0.00085	0.0032	< 0.10	1.1	0.00044	2.8	< 0.00010	7.0	0.18	< 0.00020	< 0.0010	0.017	0.00076	0.0033	0.0067
	07-Jun-2021	Grab	**2.2** [#1,7]	< 0.00060	0.0018	0.082	< 0.0010	< 0.020	0.00012	38	**0.0052** [#7]	**0.0016** [#7]	**0.0045** [#1]	**3.3** [#1,7]	0.0017	< 0.020	10	0.067	< 0.0000019	0.0011	0.0069	< 0.10	1.6	0.00041	4.0	< 0.00010	7.1	0.17	< 0.00020	< 0.0010	0.075	0.00095	0.0068	0.020
	19-Aug-2021	Grab	**2.9** [#1,2,7]	< 0.00060	**0.0026**	**0.13**	< 0.0010	0.030	**0.00019** [#1]	42	0.0046	**0.0030** [#7]	**0.0075** [#1]	**6.8** [#1,7]	0.0031	< 0.020	12	**0.13** [#2]	0.0000086	0.0013	**0.011**	0.15	2.0	0.00044	7.7 [#6]	< 0.00010	7.0	0.21	< 0.00020	< 0.0010	0.036	0.00088	0.0079	**0.080** [#1]
(Duplicate)	19-Aug-2021	Grab	**3.4** [#1,2]	< 0.00060	**0.0030**	**0.13**	< 0.0010	0.028	**0.00021** [#1]	43	**0.0052** [#7]	**0.0033** [#7]	**0.0084** [#1]	**7.3** [#1,7]	0.0034	< 0.020	12	**0.14** [#2]	0.0000095	0.0014	**0.011**	0.15	2.2	0.00054	8.2	< 0.00010	7.2	0.22	< 0.00020	< 0.0010	0.043	0.00094	0.0094	**0.12** [#1,3]

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00017**	---	**0.0089**	---	**0.00257**	**0.3**	**0.00359**	---	---	**0.37**	**0.000026**	**0.073**	**0.1028**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.019**
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00037**	---	**0.0089**	---	**0.004**	**0.3**	**0.007**	---	---	**0.29**	**0.000026**	**0.073**	**0.1500**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.039**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	---	**5**	**0.007**	**None required**	**0.05**	---	**2**	---	**0.005**	---	---	**0.12**	**0.001**	---	---	---	---	**0.05**	---	---	---	**7**	---	---	---	**0.02**	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			**0.76**	---	---	---	---	---	---	---	**0.005**	**0.0011**	---	**0.33**	**0.0059**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			**0.72**	---	---	---	---	---	---	---	**0.005**	**0.0017**	---	**0.29**	**0.0075**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
	18-Sep-2021	Grab	**0.78** [#1,7]	0.0010	0.0011	0.068	< 0.0010	< 0.020	0.000058	36	0.0023	0.00086	**0.0034** [#1]	**1.7** [#1,7]	0.00091	< 0.020	11	0.037	0.0000037	0.0011	0.0060	< 0.10	1.2	0.00052	3.1	< 0.00010	7.7	0.20	< 0.00020	< 0.0010	0.013	0.00085	0.0028	**0.11** [#1]
	10-Aug-2022	Grab	**0.91** [#1,7]	< 0.00060	0.0011	0.081	< 0.0010	0.020	0.000069	34	0.0014	0.0010	**0.0028** [#1]	**2.3** [#1,7]	0.0012	< 0.020	10	0.051	0.0000041	0.00087	0.0039	< 0.10	1.4	0.00032	4.9	< 0.00010	7.0	0.20	< 0.00020	< 0.0010	0.015	0.00071	0.0030	**0.053** [#1]
	11-Mar-2023	Grab	0.034	< 0.00060	0.00036	0.039	< 0.0010	< 0.020	0.000037	29	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	9.9	< 0.0040	< 0.0000019	0.00092	0.00073	< 0.10	0.89	< 0.00020	1.6	< 0.00010	9.6	0.27	< 0.00020	< 0.0010	0.0015	0.00082	< 0.0010	0.0044
	25-Jul-2023	Grab	**0.51** [#1]	< 0.00060	0.00069	0.057	< 0.0010	< 0.020	0.000041	37	< 0.0010	0.00043	0.0016	**0.78** [#1,7]	0.00044	< 0.020	11	0.023	< 0.0000019	0.0010	0.0036	< 0.10	1.1	0.00041	2.6	< 0.00010	8.1	0.22	< 0.00020	< 0.0010	0.010	0.00079	0.0013	0.0051
	19-Aug-2023	Grab	**1.4** [#1,7]	< 0.00060	0.0013	0.078	< 0.0010	< 0.020	0.000081	39	0.0023	0.00073	**0.0028** [#1]	**1.6** [#1,7]	0.00094	< 0.020	11	0.034	0.0000047	0.0012	0.0037	< 0.10	1.4	0.00048	4.2	< 0.00010	8.3	0.23	< 0.00020	< 0.0010	0.034	0.0010	0.0042	0.0091
	26-Sep-2023	Grab	**1.4** [#1,7]	< 0.00060	0.00095	0.075	< 0.0010	< 0.020	0.000079	40	0.0023	0.00092	**0.0027** [#1]	**2.0** [#1,7]	0.00099	< 0.020	12	0.051	0.0000021	0.0011	0.0037	< 0.10	1.5	0.00036	4.5	< 0.00010	9.2	0.24	< 0.00020	< 0.0010	0.031	0.00089	0.0033	0.011
	17-Mar-2024	Grab	0.024	< 0.00060	0.00037	0.041	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	9.8	< 0.0040	< 0.0000019	0.0011	0.00092	< 0.10	1.0	0.00027	1.9	< 0.00010	9.7	0.24	< 0.00020	< 0.0010	< 0.0010	0.00084	< 0.0010	< 0.0030
	19-Jul-2024	Grab	**4.5** [#1,2,7]	< 0.00060	**0.0048**	**0.14**	< 0.0010	0.025	**0.00027** [#1]	42	**0.0074** [#7]	**0.0049** [#7]	**0.010** [#1]	**9.6** [#1,7]	**0.0049** [#1]	< 0.026	13	**0.15** [#2]	0.000017	0.0015	**0.016**	0.17	2.2	0.00064	6.3	< 0.00010	7.1	0.24	< 0.00020	< 0.0010	0.041	**0.0012**	0.014	**0.065** [#1]
	15-Aug-2024	Grab	**0.47** [#1]	< 0.00060	0.00051	0.060	< 0.0010	< 0.020	0.000037	39	< 0.0010	0.00035	0.0019	**0.68** [#1,7]	0.00052	< 0.020	11	0.023	< 0.0000019	0.0011	0.0021	< 0.10	1.1	0.00041	3.2	< 0.00010	7.8	0.23	< 0.00020	< 0.0010	0.020	0.00087	0.0022	0.0043
	17-Sep-2024	Grab	**1.6** [#1,7]	< 0.00060	0.0012	0.066	< 0.0010	< 0.020	0.000092	46	0.0018	0.0010	**0.0030** [#1]	**1.5** [#1,7]	0.0014	< 0.020	11	0.041	< 0.0000019	0.0010	0.0044	< 0.10	1.5	0.00034	2.3	< 0.00010	10	0.24	< 0.00020	< 0.0010	0.048	0.00098	0.0034	0.013
AEMP-DS-06 (FGH Blue Fish)	10-Mar-2023	Grab	**0.13** [#1]	< 0.00060	0.00043	0.060	< 0.0010	< 0.020	0.000046	43	< 0.0010	< 0.00030	**0.0033** [#1]	0.12	0.00023	< 0.020	11	< 0.0040	< 0.0000019	0.0013	0.0023	< 0.10	1.2	0.00055	2.3	< 0.00010	14	0.30	< 0.00020	< 0.0010	0.0025	0.0010	0.0018	< 0.0030
(Duplicate)	10-Mar-2023	Grab	**0.13** [#1]	< 0.00060	0.00034	0.060	< 0.0010	< 0.020	0.000025	44	< 0.0010	< 0.00030	**0.0027** [#1]	0.12	0.00022	< 0.020	12	< 0.0040	< 0.0000019	0.0010	0.0016	< 0.10	1.2	0.00050	2.3	< 0.00010	14	0.29	< 0.00020	< 0.0010	0.0034	0.00099	0.0017	0.0032
	24-Jul-2023	Grab	**1.3** [#1,7]	< 0.00060	0.00093	0.075	< 0.0010	< 0.020	0.000098	44	0.0022	0.00086	**0.0027** [#1]	**1.4** [#1,7]	0.00088	< 0.020	14	0.035	< 0.0000019	0.0012	0.0035	< 0.10	1.2	0.00053	3.5	< 0.00010	9.2	0.27	< 0.00020	< 0.0010	0.021	0.0011	0.0035	0.010
	21-Aug-2023	Grab	**2.3** [#1,7]	< 0.00060	0.0014	0.098	< 0.0010	0.020	0.00010	50	0.0034	**0.0013** [#7]	**0.0032** [#1]	**2.4** [#1,7]	0.0012	< 0.020	17	0.051	0.0000035	0.0013	0.0052	< 0.10	1.7	0.00065	5.9	< 0.00010	9.5	0.29	< 0.00020	< 0.0010	0.060	0.0011	0.0072	0.016
	03-Oct-2023	Grab	**0.98** [#1,7]	< 0.00060	0.00069	0.068	< 0.0010	< 0.020	0.00014	50	< 0.0010	**0.0020** [#7]	**0.0028** [#1]	**1.3** [#1,7]	0.00045	< 0.020	20	0.028	< 0.0000019	0.0011	0.0063	< 0.10	1.1	0.00050	3.1	< 0.00010	12	0.27	< 0.00020	< 0.0010	0.0081	0.00099	0.0020	0.017
	15-Mar-2024	Grab	**1.0** [#1,7]	< 0.00060	0.0013	**0.13**	< 0.0010	0.021	0.00011	55	0.0021	**0.0016** [#7]	**0.0048** [#1]	**2.9** [#1,7]	0.0018	< 0.020	17	0.057	0.0000042	0.0012	0.0056	< 0.10	2.1	0.00050	6.1	< 0.00010	16	0.36	< 0.00020	< 0.0010	0.013	0.0010	0.0021	**0.056** [#1]
	17-Jul-2024	Grab	**1.6** [#1,7]	< 0.00060	0.0017	0.10	< 0.0010	< 0.020	0.00014	45	0.0027	**0.0017** [#7]	**0.0043** [#1]	**2.9** [#1,7]	0.0017	< 0.020	15	0.050	0.0000064	0.0012	0.0077	< 0.10	1.4	0.00057	5.6	< 0.00010	8.5	0.28	< 0.00020	< 0.0010	0.017	0.0010	0.0052	**0.041** [#1]
	14-Aug-2024	Grab	**0.87** [#1,7]	< 0.00060	0.00081	0.076	< 0.0010	< 0.020	0.000098	48	0.0018	0.00071	0.0023	**1.3** [#1,7]	0.00098	< 0.020	17	0.030	< 0.0000019	0.0012	0.0036	< 0.10	1.3	**0.00069**	4.6	< 0.00010	9.1	0.29	< 0.00020	< 0.0010	0.037	0.0011	0.0030	0.011
	18-Sep-2024	Grab	**1.1** [#1,7]	< 0.00060	0.00071	0.072	< 0.0010	< 0.020	0.000093	53	< 0.0010	**0.0019** [#7]	**0.0027** [#1]	**1.9** [#1,7]	0.00037	< 0.020	24	0.038	< 0.0000019	0.00089	0.0056	< 0.10	1.1	0.00056	2.3	< 0.00010	11	0.26	< 0.00020	< 0.0010	0.026	0.00089	0.0025	0.016
AEMP-DS-07 (FGH Ramparts)	17-Jul-2024	Grab	**2.2** [#1,7]	< 0.00060	0.0022	**0.12**	< 0.0010	0.024	0.00015	42	0.0035	**0.0024** [#7]	**0.0059** [#1]	**4.7** [#1,7]	0.0027	< 0.020	12	0.085	0.000012	0.0015	0.0079	0.13	1.6	0.00057	4.3	< 0.00010	7.1	0.23	< 0.00020	< 0.0010	0.025	0.0011	0.0070	**0.062** [#1]
	14-Aug-2024	Grab	**2.1** [#1,7]	< 0.00060	0.0021	**0.12**	< 0.0010	< 0.020	0.00014	46	0.0032	**0.0024** [#7]	**0.0054** [#1]	**4.8** [#1,7]	0.0024	< 0.020	14	0.10	0.0000061	0.0013	0.0076	0.13	1.5	0.00050	4.3	< 0.00010	7.6	0.25	< 0.00020	< 0.0010	0.027	0.0011	0.0059	**0.055** [#1]
	18-Sep-2024	Grab	**0.36** [#1]	< 0.00060	0.00054	0.068	< 0.0010	0.020	0.000043	41	< 0.0010	0.00035	0.0016	**0.60** [#1,7]	0.00024	< 0.020	12	0.015	< 0.0000019	0.0010	0.0022	< 0.10	1.2	0.00044	2.0	< 0.00010	8.7	0.30	< 0.00020	< 0.0010	0.0063	0.00086	0.0013	0.0040
AEMP-DS-08 (Radar South)	19-Jul-2024	Grab	**3.2** [#1,1,7]	< 0.00060	**0.0043**	**0.12**	< 0.0010	0.025	**0.00022** [#1]	40	**0.0061** [#7]	**0.0041** [#7]	**0.0083** [#1]	**8.2** [#1,7]	**0.0046** [#1]	< 0.026	12	**0.13** [#2]	0.000012	0.0014	**0.014**	0.15	2.1	0.00053	5.7	< 0.00010	7.6	0.24	< 0.00020	< 0.0010	0.035	0.0011	0.012	**0.064** [#1]
	15-Aug-2024	Grab	**0.96** [#1,7]	< 0.00060	0.00090	0.070	< 0.0010	0.021	0.000075	37	0.0012	0.00079	**0.0027** [#1]	**1.7** [#1,7]	0.0010	< 0.020	11	0.040	0.0000025	0.0011	0.0031	< 0.10	1.4	0.00045	2.8	< 0.00010	12	0.24	< 0.00020	< 0.0010	0.013	0.00088	0.0024	**0.032** [#1]
	17-Sep-2024	Grab	**0.28** [#1]	< 0.00060	0.00058	0.049	< 0.0010	0.021	0.000063	41	< 0.0010	0.00036	0.0016	**0.32** [#1]	0.00026	< 0.020	11	0.010	< 0.0000019	0.0011	0.0025	< 0.10	1.2	0.00038	1.8	< 0.00010	10	0.23	< 0.00020	< 0.0010	0.0077	0.00092	< 0.0010	0.0060
AEMP-DS-09 (End of Facility)	17-Mar-2024	Grab	0.069	< 0.00060	0.00046	0.065	< 0.0010	< 0.020	0.000027	45	< 0.0010	< 0.00030	**0.0026** [#1]	0.089	< 0.00020	< 0.020	12	< 0.0040	< 0.0000019	**0.0025**	0.0025	< 0.10	1.3	0.00051	2.7	< 0.00010	15	0.34	< 0.00020	< 0.0010	0.0027	**0.0014**	0.0011	0.0048
	19-Jul-2024	Grab	**1.5** [#1,7]	< 0.00060	0.0016	0.079	< 0.0010	< 0.020	0.000073	39	0.0025	**0.0012** [#7]	**0.0036** [#1]	**2.7** [#1,7]	0.0013	< 0.020	11	0.033	0.000014 [#4]	0.0011	0.0060	< 0.10	1.4	0.00046	3.3	< 0.00010	6.9	0.24	< 0.00020	< 0.0010	0.031	0.00091	0.0049	**0.039** [#1]
	15-Aug-2024	Grab	**1.2** [#1,7]	< 0.00060	0.00088	0.072	< 0.0010	< 0.020	0.000078	41	0.0016	0.00086	0.0023	**1.5** [#1,7]	0.00080	< 0.020	12	0.046	< 0.0000019	0.0011	0.0034	< 0.10	1.7	0.00049	2.7	< 0.00010	19	0.26	< 0.00020	< 0.0010	0.032	0.0010	0.0036	0.0086
	17-Sep-2024	Grab	**0.38** [#1]	< 0.00060	0.00048	0.063	< 0.0010	< 0.020	0.000063	50	< 0.0010	0.00041	0.0018	**0.45** [#1,7]	0.00031	< 0.020	13	0.024	< 0.0000019	0.0013	0.0034	< 0.10	1.3	0.00047	2.1	< 0.00010	9.9	0.29	< 0.00020	< 0.0010	0.0058	0.0011	0.0010	0.0069
UPSTREAM																																		
AEMP-US-01 (Midway)	12-Mar-2023	Grab	**1.6** [#1,7]	< 0.00060	0.0014	0.073	< 0.0010	< 0.020	0.000072	23	0.0029	**0.0013** [#7]	**0.0027** [#1]	**2.6** [#1,7]	0.0017	< 0.020	9.5	0.069	0.0000046	0.00057	0.0039	< 0.10	1.4	< 0.00020	5.0	< 0.00010	7.8	0.18	< 0.00020	< 0.0010	0.062	0.00059	0.0051	0.016
	25-Jul-2023	Grab	**0.39** [#1]	< 0.00060	0.00048	0.051	< 0.0010	< 0.020	0.000033	34	< 0.0010	< 0.00030	0.0013	**0.48** [#1,7]	0.00028	< 0.020	10	0.014	< 0.0000019	0.00095	0.0015	< 0.10	1.1	0.00031	2.4	< 0.00010	8.7	0.22	< 0.00020	< 0.0010	0.0093	0.00068	< 0.0010	0.0031
	19-Aug-2023	Grab	**0.70** [#1]	0.00075	0.00071	0.054	< 0.0010	< 0.020	0.000048	30	0.0013	0.00036	0.0017	**0.78** [#1,7]	0.00056	< 0.020	9.8	0.018	0.0000028	0.00090	0.0021	< 0.10	1.0	0.00035	2.6	< 0.00010	8.5	0.21	< 0.00020	< 0.0010	0.016	0.00071	0.0023	0.0050
	26-Sep-2023	Grab	0.079	< 0.00060	0.00026	0.035	< 0.0010	< 0.020	< 0.000020	24	< 0.0010	< 0.00030	< 0.0010	0.11	< 0.00020	< 0.020	8.9	0.0045	< 0.0000019	0.00058	0.00071	< 0.10	0.82	< 0.00020	1.3	< 0.00010	7.7	0.18	< 0.00020	< 0.0010	0.0019	0.00048	< 0.0010	< 0.0030
	16-Mar-2024	Grab	**0.38** [#1]	< 0.00060	0.00038	0.044	< 0.0010	< 0.020	< 0.000020	25	< 0.0010	< 0.00030	0.0017	**0.64** [#1,7]	0.00030	< 0.020	9.1	0.013	---	0.00058	0.0014	< 0.10	1.1	< 0.00020	3.0	< 0.00010	8.4	0.18	< 0.00020	< 0.0010	0.011	0.00047	< 0.0010	0.0064
	19-Jul-2024	Grab	**3.2** [#1,2,7]	< 0.00060	0.0033	0.10	< 0.0010	0.025	**0.00017** [#1]	33	**0.0052** [#7]	**0.0033** [#7]	**0.0072** [#1]	**6.6** [#1,7]	0.0034	< 0.020	11	0.11	< 0.0000019	0.0014	0.011	0.12	1.7	0.00047	5.1	< 0.00010	8.5	0.21	< 0.00020	< 0.0010	0.032	0.00094	0.0097	**0.052** [#1]
	15-Aug-2024	Grab	**0.30** [#1]	< 0.00060	0.00044	0.051	< 0.0010	< 0.020	0.000021	30	< 0.0010	< 0.00030	0.0011	**0.45** [#1,7]	0.00025	< 0.020	10	0.013	< 0.0000019	0.00088	0.0013	< 0.10	1.0	0.00028	2.2	< 0.00010	8.7	0.21	< 0.00020	< 0.0010	0.012	0.00066	0.0010	< 0.0030
	17-Sep-2024	Grab	**0.23** [#1]	< 0.00060	0.00043	0.045	< 0.0010	< 0.020	0.000029	26	< 0.0010	< 0.00030	< 0.0010	**0.38** [#1,7]	0.00049	< 0.020	8.8	0.011	< 0.0000019	0.00062	0.0015	< 0.10	0.89	< 0.00020	1.4	< 0.00010	12	0.19	< 0.00020	< 0.0010	0.0068	0.00051	< 0.0010	< 0.0030
AEMP-US-02 (10 mile)	23-Jun-2018	Grab	**0.93** [#1,7]	< 0.00060	0.0011	0.061	< 0.0010	< 0.020	0.000080	32	0.0018	**0.0012** [#7]	**0.0036** [#1]	**1.5** [#1,7]	0.00093	< 0.020	8.7	0.031	0.0000033	0.0011	0.0050	< 0.10	1.1	0.00041	2.5	< 0.00010	6.1	0.15	< 0.00020	< 0.0010	0.024	0.00085	0.0027	0.011
	14-Aug-2018	Grab	**1.6** [#1,7]	< 0.00060	0.0013	0.077	< 0.0010	< 0.020	0.00015	40	0.0014	**0.0016** [#7]	**0.0037** [#1]	**2.0** [#1,7]	0.0012	< 0.020	12	0.052	0.0000068	0.0011	0.0057	< 0.10	1.3	0.00047	4.1	< 0.00010	7.8	0.24	< 0.00020	< 0.0010	0.029	0.00084	0.0035	**0.021** [#1]
(Duplicate)	14-Aug-2018	Grab	**1.4** [#1,7]	< 0.00060	0.0011	0.076	< 0.0010	< 0.020	0.00015	40	0.0016	**0.0015** [#7]	**0.0036** [#1]	**2.1** [#1,7]	0.0011	< 0.020	12	0.052	0.0000052	0.0011	0.0054	< 0.10	1.3	0.00042	3.8	< 0.00010	7.7	0.23	< 0.00020	< 0.0010	0.068	0.00086	0.0037	**0.020** [#1]
	18-Oct-2018	Grab	**0.44** [#1]	< 0.00060	0.00069	0.057	< 0.0010	< 0.020	0.000053	28	< 0.0010	0.00047	0.0016	**0.89** [#1,7]	0.00057	< 0.020	9.6	0.028	< 0.0000020	0.00079	0.0031	< 0.10	0.98	< 0.00020	1.9	< 0.00010	9.5	0.22	< 0.00020	< 0.0010	0.014	0.00057	0.0016	0.0055
	10-Jun-2019	Grab	**2.0** [#1,7]	0.00096	0.0021	0.098	< 0.0010	< 0.020	0.00015	38	0.0033	**0.0024** [#7]	**0.0074** [#1]	**4.8** [#1,7]	0.0026	< 0.020	10	0.11	0.0000090	0.0012	0.0081	0.11	1.5	0.00038	4.0	< 0.00010	6.2	0.18	< 0.00020	< 0.0010	0.028	0.00087	0.0056	**0.042** [#1]
	26-Aug-2019	Grab	**1.7** [#1,7]	< 0.00060	0.0013	0.076	< 0.0010	< 0.020	0.000083	40	0.0026	0.0010	**0.0031** [#1]	**2.2** [#1,7]	0.0011	< 0.020	11	0.042	< 0.0000020	0.0011	0.0043	< 0.10	1.5	0.00053	5.2	< 0.00010	8.1	0.24	< 0.00020	< 0.0010	0.028	0.00097	0.0048	0.013
	01-Oct-2019	Grab	**1.6** [#1,7]	< 0.00060	0.0011	0.085	< 0.0010	< 0.020	0.000086	37	0.0026	0.0010	**0.0043** [#1]	**2.3** [#1,7]	0.0014	< 0.020	11	0.028	0.0000061	0.0012	0.0051	< 0.10	1.4	0.00050	3.1	< 0.00010	8.9	0.24	< 0.00020	< 0.0010	0.039	0.00095	0.0050	0.012
	12-Jun-2020	Grab	**4.7** [#1,2,7]	< 0.00060	0.0039	0.16	< 0.0010	< 0.020	**0.00028** [#1]	45	**0.0074** [#7]	**0.0049** [#7]	**0.012** [#1]	**11** [#1,7]	**0.0051** [#1,2]	< 0.020	13	**0.18** [#2]	0.000024 [#4]	0.0019	0.017	0.19	2.0	0.00061	7.8	< 0.00010	5.2	0.22	< 0.00020	< 0.0010	0.044	0.0011	0.013	**0.079** [#1]
	28-Jul-2020	Grab	**1.1** [#1,7]	< 0.00060	0.0017	0.084	< 0.0010	< 0.020	0.00012	39	0.0032	**0.0013** [#7]	**0.0042** [#1]	**2.8** [#1,7]	0.0016	< 0.020	10	0.064	< 0.000019 [#4]	0.0011	0.0063	< 0.10	1.0	0.00067	3.3	< 0.00010	6.0	0.19	< 0.00020	< 0.0010	0.020	0.00083	0.0037	0.012
	22-Sep-2020	Grab	**0.76** [#1,7]	0.00087	0.00099	0.060	< 0.0010	< 0.020	0.000065	39	0.0021	0.00075	**0.0028** [#1]	**1.2** [#1,7]	0.00075	< 0.020	10	0.032	0.0000023	0.0012	0.0039	< 0.10	1.1	0.00050	3.0	0.00013	7.2	0.19	< 0.00020	< 0.0010	0.016	0.00094	0.0038	0.0077
	07-Jun-2021	Grab	**2.7** [#1,7]	< 0.00060	0.0016	0.081	< 0.0010	0.020	0.000088	38	0.0044	**0.0015** [#7]	**0.0050** [#1]	**3.3** [#1,7]	0.0017	< 0.020	10	0.064	0.0000029	0.00099	0.0066	< 0.10	1.6	0.00032	4.2	< 0.00010	7.1	0.17	< 0.00020	< 0.0010	0.069	0.00079	0.0075	0.017
	19-Aug-2021	Grab	**3.0** [#1,2,7]	< 0.00060	0.0027	0.12	< 0.0010	0.048	**0.00018** [#1]	41	0.0045	**0.0029** [#7]	**0.0073** [#1]	**6.6** [#1,7]	0.0030	< 0.020	12	0.12 [#2]	0.000011	0.0015	0.0098	0.13	2.1	0.00052	7.9	< 0.00010	6.9	0.21	< 0.00020	0.0013	0.031	0.0011	0.0082	**0.099** [#1]
	18-Sep-2021	Grab	**1.7** [#1,7]	< 0.00060	0.0013	0.075	< 0.0010	< 0.020	0.000062	37	0.0033	0.0010	**0.0032** [#1]	**1.9** [#1,7]	0.0010	< 0.020	11	0.039	0.0000038	0.0011	0.0046	< 0.10	1.6	0.00042	5.9	< 0.00010	7.5	0.21	< 0.00020	< 0.0010	0.040	0.00091	0.0053	0.0098
	10-Aug-2022	Grab	**0.84** [#1,7]	< 0.00060	0.0010	0.075	< 0.0010	< 0.020	0.000077	35	< 0.0010	0.00076	**0.0024** [#1]	**1.6** [#1,7]	0.00088	< 0.020	10	0.037	0.0000034	0.00086	0.0033	< 0.10	1.3	0.00030	4.6	< 0.00010	7.2	0.21	< 0.00020	< 0.0010	0.015	0.00076	0.0024	0.0097
	12-Mar-2023	Grab	0.037	< 0.00060	< 0.00020	0.036	< 0.0010	< 0.020	< 0.000020	24	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	8.6	< 0.0040	< 0.0000019	0.00060	0.00078	< 0.10	0.77	< 0.00020	1.5	< 0.00010	8.2	0.20	< 0.00020	< 0.0010	< 0.0010	0.00050	< 0.0010	< 0.0030

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00017**	---	**0.0089**	---	**0.00257**	**0.3**	**0.00359**	---	---	**0.37**	**0.000026**	**0.073**	**0.1028**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.019**
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	---	**0.005**	---	---	**1.5**	**0.00037**	---	**0.0089**	---	**0.004**	**0.3**	**0.007**	---	---	**0.29**	**0.000026**	**0.073**	**0.1500**	---	---	**0.001**	---	**0.00025**	---	---	**0.0008**	---	---	**0.015**	---	**0.039**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	---	**5**	**0.007**	**None required**	**0.05**	---	**2**	---	**0.005**	---	---	**0.12**	**0.001**	---	---	---	---	**0.05**	---	---	---	**7**	---	---	---	**0.02**	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			**0.76**	---	---	---	---	---	---	---	**0.005**	**0.0011**	---	**0.33**	**0.0059**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			**0.72**	---	---	---	---	---	---	---	**0.005**	**0.0017**	---	**0.29**	**0.0075**	---	---	---	---	---	---	---	---	---	---	---	---	**2.5**	---	---	---	---	**0.12**	---
	25-Jul-2023	Grab	**0.23** [#1]	< 0.00060	0.00048	0.052	< 0.0010	< 0.020	0.000029	38	< 0.0010	< 0.00030	0.0012	**0.30** [#1]	0.00022	< 0.020	11	0.014	< 0.0000019	0.0012	0.0015	< 0.10	1.0	0.00037	2.0	< 0.00010	8.8	0.24	< 0.00020	< 0.0010	0.0050	0.00083	< 0.0010	< 0.0030
	19-Aug-2023	Grab	**1.5** [#1,7]	< 0.00060	0.0012	0.078	< 0.0010	< 0.020	0.000067	37	0.0026	0.00087	**0.0027** [#1]	**1.7** [#1,7]	0.00098	< 0.020	11	0.040	0.0000025	0.0013	0.0045	< 0.10	1.4	0.00045	4.4	< 0.00010	8.4	0.24	< 0.00020	< 0.0010	0.046	0.00098	0.0048	0.0095
	24-Sep-2023	Grab	**0.96** [#1,7]	< 0.00060	0.00095	0.072	< 0.0010	< 0.020	0.000063	36	0.0015	0.00084	**0.0026** [#1]	**1.6** [#1,7]	0.00097	< 0.020	12	0.040	< 0.0000019	0.0014	0.0052	< 0.10	1.2	0.00038	2.8	< 0.00010	9.9	0.26	< 0.00020	< 0.0010	0.017	0.0010	0.0024	0.0093
	17-Mar-2024	Grab	0.046	< 0.00060	0.00041	0.041	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.0012	0.062	< 0.00020	< 0.020	9.4	< 0.0040	< 0.0000019	0.0010	0.0012	< 0.10	0.92	0.00024	1.9	< 0.00010	9.7	0.22	< 0.00020	< 0.0010	< 0.0010	0.00083	< 0.0010	< 0.0030
	19-Jul-2024	Grab	**1.7** [#1,7]	< 0.00060	0.00092	0.035	< 0.0010	< 0.020	0.000048	10	0.0029	0.00088	0.0019	**1.8** [#1,7]	0.0011	< 0.020	3.1	0.024	0.000011	0.00044	0.0030	< 0.10	0.64	< 0.00020	1.6	< 0.00010	2.2	0.065	< 0.00020	< 0.0010	0.085	0.00032	0.0071	0.0091
	15-Aug-2024	Grab	**0.49** [#1]	< 0.00060	0.00051	0.054	< 0.0010	< 0.020	0.000029	35	< 0.0010	0.00031	0.0014	**0.53** [#1,7]	0.00037	< 0.020	11	0.016	< 0.0000019	0.0010	0.0019	< 0.10	1.1	0.00036	2.5	< 0.00010	8.0	0.23	< 0.00020	< 0.0010	0.0077	0.00080	0.0014	0.0035
	17-Sep-2024	Grab	0.091	< 0.00060	0.00034	0.040	< 0.0010	< 0.020	0.000021	30	< 0.0010	< 0.00030	< 0.0010	0.097	< 0.00020	0.025	9.4	0.0052	< 0.0000019	0.00093	0.0014	< 0.10	0.89	0.00024	1.3	< 0.00010	7.4	0.22	< 0.00020	< 0.0010	0.0015	0.00071	< 0.0010	< 0.0030
AEMP-US-03 (Norman Wells Upstream)	09-Mar-2023	Grab	0.027	< 0.00060	0.00024	0.035	< 0.0010	< 0.020	0.000023	26	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	9.1	< 0.0040	< 0.0000019	0.00057	0.00071	< 0.10	0.80	< 0.00020	1.5	< 0.00010	8.6	0.21	< 0.00020	< 0.0010	< 0.0010	0.00046	0.0010	< 0.0030
	17-Mar-2024	Grab	0.025	< 0.00060	0.00034	0.040	< 0.0010	< 0.020	< 0.000020	29	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	9.6	< 0.0040	< 0.0000019	0.0010	0.0010	< 0.10	0.91	0.00025	1.9	< 0.00010	9.5	0.23	< 0.00020	0.022	< 0.0010	0.00077	< 0.0010	< 0.0030
	19-Jul-2024	Grab	**4.3** [#1,2,7]	< 0.00060	0.0043	0.13	< 0.0010	0.022	**0.00023** [#1]	38	**0.0068** [#7]	**0.0044** [#7]	**0.0091** [#1]	**8.8** [#1,7]	**0.0046** [#1]	< 0.020	11	**0.14** [#2]	0.000014 [#4]	0.0017	0.014	0.17	1.9	0.00060	6.4	< 0.00010	7.3	0.22	< 0.00020	< 0.0010	0.038	0.0011	0.013	**0.058** [#1]
	16-Aug-2024	Grab	**6.3** [#1,2,7]	< 0.0024	**0.0066** [#1]	0.24	< 0.0040	0.024	**0.00044** [#1]	57	**0.011** [#1,7]	**0.0076** [#7]	**0.015** [#1]	**15** [#1,7]	**0.0072** [#1,2,7]	< 0.020	18	**0.31** [#2]	0.000021	0.0019	0.021	0.36	3.4	0.00099	9.3	< 0.00040 [#1]	8.1	0.28	< 0.00080	< 0.0040	0.066	0.0013	0.019	**0.24** [#1]
	12-Sep-2024	Grab	**0.12** [#1]	< 0.00060	0.00038	0.045	< 0.0010	< 0.020	0.000037	32	< 0.0010	< 0.00030	0.0011	0.11	< 0.00020	< 0.020	11	0.0050	< 0.0000019	0.00094	0.0016	< 0.10	0.94	0.00033	1.4	< 0.00010	8.2	0.22	< 0.00020	< 0.0010	0.0016	0.00077	< 0.0010	< 0.0030
BOSWORTH CREEK																																		
Bosworth Upstream Data UCL			**0.138**	---	**0.00042**	**0.089**	---	---	**0.0001**	---	**0.005**	---	**0.0010**	**0.297**	---	---	---	---	---	**0.0023**	**0.00130**	---	---	**0.00039**	---	---	---	---	---	---	---	**0.0015**	---	**0.015**
Bosworth Upstream Data LCL			**<0.003**	---	**<0.00020**	**0.066**	---	---	**N/C**	---	**N/C**	---	**0.00014**	**<0.060**	---	---	---	---	---	**0.0014**	**<0.0005**	---	---	**<0.0002**	---	---	---	---	---	---	---	**0.0009**	---	**N/C**
DOWNSTREAM																																		
AEMP-DS-01 (Lower Bosworth Creek)	18-Aug-2017	Grab	0.039	< 0.00060	0.00026	0.085	< 0.0010	0.031	0.000020	74	< 0.0010	< 0.00030	0.00092	0.11	< 0.00020	< 0.020	27	0.0098	0.0000021	0.0018	0.00079	< 0.10	1.1	0.00021	2.1	< 0.00010	22	1.3	< 0.00020	< 0.0010	0.0032	0.0010	0.0014	< 0.0030
	16-Sep-2017	Grab	0.031	< 0.00060	0.00032	0.082	< 0.0010	0.024	< 0.000020	73	< 0.0010	< 0.00030	0.00064	0.096	< 0.00020	< 0.020	29	0.0087	< 0.0000020	0.0017	0.00077	< 0.10	1.0	< 0.00020	2.1	< 0.00010	19	1.3	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
(Duplicate)	16-Sep-2017	Grab	0.032	< 0.00060	0.00027	0.080	< 0.0010	0.023	< 0.000020	72	< 0.0010	< 0.00030	0.00035	0.10	< 0.00020	< 0.020	28	0.0084	< 0.0000020	0.0018	0.00078	< 0.10	0.98	< 0.00020	2.1	< 0.00010	19	1.2	< 0.00020	< 0.0010	< 0.0010	0.0011	0.0013	< 0.0030
	16-Oct-2017	Grab	**0.23** [#1]	< 0.00060	0.00040	0.079	< 0.0010	0.022	0.000027	75	< 0.0010	< 0.00030	0.00074	**0.57** [#1,7]	0.00030	< 0.020	31	0.020	< 0.0000020	0.0019	**0.0014**	< 0.10	1.1	0.00025	2.3	< 0.00010	20	1.4	< 0.00020	< 0.0010	0.0039	0.0012	0.0020	< 0.0030
	23-Jun-2018	Grab	0.047	< 0.00060	0.00036	0.086	< 0.0010	0.029	< 0.000020	76	< 0.0010	< 0.00030	0.00073	0.12	< 0.00020	< 0.020	27	0.0085	< 0.0000020	**0.0027**	0.0012	< 0.10	1.1	0.00031	2.0	< 0.00010	18	1.3	< 0.00020	< 0.0010	< 0.0010	**0.0016**	< 0.0010	< 0.0030
	12-Aug-2018	Grab	0.030	< 0.00060	0.00026	0.073	< 0.0010	0.023	< 0.000020	72	< 0.0010	< 0.00030	0.00033	0.11	< 0.00020	< 0.020	28	0.0091	0.0000025	0.0018	0.0010	< 0.10	0.93	< 0.00020	2.1	< 0.00010	14	1.3	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	16-Oct-2018	Grab	**0.20** [#1]	< 0.00060	0.00024	0.074	< 0.0010	0.027	0.000031	78	< 0.0010	< 0.00030	0.00071	**0.50** [#1,7]	0.00026	< 0.020	31	0.017	0.0000020	0.0019	**0.0013**	< 0.10	1.1	0.00031	2.3	< 0.00010	18	1.5	< 0.00020	< 0.0010	0.0038	0.0013	< 0.0010	< 0.0030
	03-Jun-2019	Grab	0.081	< 0.00060	0.00032	0.076	< 0.0010	0.022	< 0.000020	67	< 0.0010	< 0.00030	0.00076	0.18	< 0.00020	< 0.020	25	0.0078	< 0.0000020	0.0016	0.00089	< 0.10	1.1	< 0.00020	1.8	< 0.00010	15	1.1	< 0.00020	< 0.0010	0.0012	0.0011	< 0.0010	< 0.0030
(Duplicate)	03-Jun-2019	Grab	0.078	< 0.00060	0.00027	0.077	< 0.0010	0.022	< 0.000020	68	< 0.0010	< 0.00030	0.00061	0.19	< 0.00020	< 0.020	25	0.0081	< 0.0000020	0.0017	0.00079	< 0.10	1.0	< 0.00020	1.8	< 0.00010	15	1.1	< 0.00020	< 0.0010	0.0022	0.0011	< 0.0010	< 0.0030
	28-Aug-2019	Grab	0.079	< 0.00060	0.00023	0.083	< 0.0010	0.023	< 0.000020	79	< 0.0010	< 0.00030	0.00047	0.17	< 0.00020	< 0.020	28	0.0087	< 0.0000020	0.0018	0.00083	< 0.10	1.1	< 0.00020	2.1	< 0.00010	17	1.2	< 0.00020	< 0.0010	0.077	0.0011	< 0.0010	< 0.0030
	03-Oct-2019	Grab	0.020	< 0.00060	< 0.00020	0.075	< 0.0010	0.029	< 0.000020	79	< 0.0010	< 0.00030	0.00051	0.082	< 0.00020	< 0.020	28	0.0078	< 0.0000020	0.0016	0.0010	< 0.10	1.0	0.00032	1.8	< 0.00010	19	1.4	< 0.00020	< 0.0010	0.0010	0.0012	< 0.0010	< 0.0030
	10-Jun-2020	Grab	0.082	< 0.00060	0.00038	0.081	< 0.0010	< 0.020	< 0.000020	72	< 0.0010	< 0.00030	0.00067	**0.29** [#7]	< 0.00020	< 0.020	26	0.0067	< 0.0000019	**0.0026**	0.00091	< 0.10	1.0	< 0.00020	2.2	< 0.00010	13	1.2	< 0.00020	< 0.0010	0.0024	**0.0015**	< 0.0010	< 0.0030
	24-Jul-2020	Grab	0.024	< 0.00060	< 0.00020	0.081	< 0.0010	0.029	< 0.000020	81	0.0010	< 0.00030	0.00063	0.12	< 0.00020	< 0.020	28	0.0078	< 0.0000019	0.0019	< 0.00050	< 0.10	0.89	< 0.00020	1.9	< 0.00010	22	1.4	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	0.0033
	18-Sep-2020	Grab	0.016	< 0.00060	0.00031	0.082	< 0.0010	0.025	< 0.000020	82	< 0.0010	< 0.00030	0.00058	0.074	< 0.00020	< 0.020	28	0.0074	0.0000024	0.0018	0.00094	< 0.10	1.2	0.00020	1.9	< 0.00010	19	1.4	< 0.00020	0.0020	< 0.0010	0.0014	< 0.0010	< 0.0030
	06-Jun-2021	Grab	0.095	< 0.00060	0.00036	0.072	< 0.0010	0.024	0.000034	72	0.0019	< 0.00030	0.00093	0.18	< 0.00020	< 0.020	26	0.0086	< 0.0000019	0.0018	**0.0013**	< 0.10	0.95	0.00024	2.1	< 0.00010	15	1.2	< 0.00020	< 0.0010	0.0042	0.0012	< 0.0010	< 0.0030
	18-Aug-2021	Grab	0.012	< 0.00060	< 0.00020	0.078	< 0.0010	0.036	< 0.000020	78	< 0.0010	< 0.00030	0.00045	0.070	< 0.00020	< 0.020	30	0.0076	< 0.0000019	0.0020	0.00071	< 0.10	1.2	< 0.00020	2.3	< 0.00010	26	1.5	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	< 0.0030
	19-Sep-2021	Grab	0.012	< 0.00060	0.00028	0.080	< 0.0010	0.040	< 0.000020	86	< 0.0010	< 0.00030	0.00047	0.065	< 0.00020	< 0.020	32	0.0078	< 0.0000019	0.0019	0.00058	< 0.10	1.1	0.00024	2.2	< 0.00010	31	1.6	< 0.00020	< 0.0010	0.0012	0.0011	< 0.0010	0.0043
	11-Jun-2022	Grab	0.038	< 0.00060	0.00020	0.072	< 0.0010	0.025	< 0.000020	65	< 0.0010	< 0.00030	< 0.0010	0.11	< 0.00020	< 0.020	23	0.0076	< 0.0000019	0.0018	0.00088	< 0.10	0.91	< 0.00020	1.8	< 0.00010	16	1.2	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030
	06-Aug-2022	Grab	0.019	< 0.00060	0.00024	0.081	< 0.0010	0.033	< 0.000020	74	< 0.0010	< 0.00030	< 0.0010	0.063	< 0.00020	< 0.020	27	0.0060	< 0.0000019	0.0017	0.00073	< 0.10	1.1	< 0.00020	2.2	< 0.00010	23	1.4	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	0.0078
	26-Sep-2022	Grab	0.018	< 0.00060	< 0.00020	0.068	< 0.0010	0.032	< 0.000020	80	< 0.0010	< 0.00030	< 0.0010	0.066	< 0.00020	< 0.020	28	0.0067	< 0.0000019	0.0018	0.00066	< 0.10	1.1	0.00024	2.1	< 0.00010	26	1.3	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	26-Jul-2023	Grab	0.029	< 0.00060	0.00022	0.086	< 0.0010	0.044	< 0.000020	88	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	33	0.0077	< 0.0000019	0.0020	0.00082	< 0.10	1.3	< 0.00020	2.5	< 0.00010	28	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	18-Aug-2023	Grab	0.043	< 0.00060	0.00036	0.083	< 0.0010	0.039	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	0.095	< 0.00020	< 0.020	31	0.0085	< 0.0000019	0.0021	0.00060	< 0.10	1.2	< 0.00020	2.4	< 0.00010	30	1.5	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	< 0.0030
(Duplicate)	18-Aug-2023	Grab	0.040	< 0.00060	0.00035	0.083	< 0.0010	0.040	< 0.000020	84	< 0.0010	< 0.00030	< 0.0010	0.10	< 0.00020	< 0.020	31	0.0084	< 0.0000019	0.0021	**0.0023**	< 0.10	1.2	< 0.00020	2.4	< 0.00010	31	1.5	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	25-Sep-2023	Grab	0.024	< 0.00060	< 0.00020	0.084	< 0.0010	0.041	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.084	< 0.00020	< 0.020	36	0.0079	< 0.0000019	0.0017	0.00067	< 0.10	1.2	< 0.00020	2.6	< 0.00010	27	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
(Duplicate)	25-Sep-2023	Grab	0.018	< 0.00060	0.00025	0.085	< 0.0010	0.037	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	0.13	< 0.00020	< 0.020	32	0.0090	< 0.0000019	0.0024	< 0.00050	< 0.10	1.2	0.00024	2.5	< 0.00010	27	1.6	< 0.00020	< 0.0010	< 0.0010	**0.0015**	< 0.0010	< 0.0030
	18-Jul-2024	Grab	0.051	< 0.00060	0.00031	0.087	< 0.0010	0.039	< 0.000020	80	< 0.0010	< 0.00030	< 0.0010	0.11	< 0.00020	< 0.020	31	0.0074	< 0.0000019	0.0021	**0.0036**	< 0.10	1.2	< 0.00020	2.5	< 0.00010	27	1.6	< 0.00020	< 0.0010	0.0022	0.0012	< 0.0010	0.0093
	16-Aug-2024	Grab	0.010	< 0.00060	0.00021	0.087	< 0.0010	0.044	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	34	0.0053	< 0.0000019	0.0020	< 0.00050	< 0.10	1.3	< 0.00020	2.3	< 0.00010	33	1.7	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	13-Sep-2024	Grab	0.074	< 0.00060	0.00022	0.082	< 0.0010	0.040	< 0.000020	84	< 0.0010	< 0.00030	< 0.0010	0.18	< 0.00020	< 0.020	32	0.011	< 0.0000019	**0.0059**	0.00075	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
(Duplicate)	13-Sep-2024	Grab	0.059	< 0.00060	0.00023	0.084	< 0.0010	0.050	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.16	< 0.00020	< 0.020	33	0.011	< 0.0000019	0.0019	0.00061	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	0.0019	0.0011	< 0.0010	< 0.0030
UPSTREAM																																		
AEMP-US-04 (Upper Bosworth Creek)	26-Jul-2023	Grab	0.024	< 0.00060	0.00025	0.080	< 0.0010	0.040	< 0.000020	83	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	31	0.0066	< 0.0000019	0.0019	0.00071	< 0.10	1.2	0.00022	2.4	< 0.00010	25	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030
	18-Aug-2023	Grab	0.033	< 0.00060	< 0.00020	0.077	< 0.0010	0.040	< 0.000020	80	< 0.0010	< 0.00030	< 0.0010	0.068	< 0.00020	< 0.020	29	0.0081	< 0.0000019	0.0021	0.00072	< 0.10	1.1	0.00025	2.3	< 0.00010	27	1.4	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	24-Sep-2023	Grab	**0.22** [#1]	< 0.00060	0.00030	0.083	< 0.0010	0.030	< 0.000020	82	< 0.0010	< 0.00030	< 0.0010	**0.45** [#1,7]	< 0.00020	< 0.020	32	0.023	< 0.0000019	0.0021	0.0011	< 0.10	1.2	0.00022	2.9	< 0.00010	25	1.5	< 0.00020	< 0.0010	0.0028	0.0014	< 0.0010	< 0.0030
	18-Jul-2024	Grab	0.088	< 0.00060	< 0.00020	0.086	< 0.0010	0.038	< 0.000020	79	< 0.0010	< 0.00030	< 0.0010	0.22	< 0.00020	< 0.020	31	0.011	< 0.0000019	0.0018	0.0010	< 0.10	1.2	< 0.00020	2.5	< 0.00010	26	1.6	< 0.00020	< 0.0010	0.0021	0.0011	< 0.0010	< 0.0030
	16-Aug-2024	Grab	0.055	< 0.00060	< 0.00020	0.089	< 0.0010	0.055	< 0.000020	87	< 0.0010	< 0.00030	< 0.0010	0.095	< 0.00020	< 0.020	35	0.0094	< 0.0000019	0.0021	0.00060	< 0.10	1.3	< 0.00020	2.5	< 0.00010	33	1.7	< 0.00020	< 0.0010	< 0.0010	0.0013	< 0.0010	< 0.0030
	13-Sep-2024	Grab	**0.40** [#1]	< 0.00060	0.00048	0.088	< 0.0010	0.037	< 0.000020	83	< 0.0010	0.00052	0.0010	**0.75** [#1,7]	0.00046	< 0.020	33	0.028	< 0.0000019	0.0021	0.0018	< 0.10	1.3	0.00024	2.5	< 0.00010	32	1.6	< 0.00020	< 0.0010	0.0062	0.0014	0.0010	0.0034
AEMP-US-05	19-Jul-2024	Grab	0.022	< 0.00060	0.00023	0.084	< 0.0010	0.045	< 0.000020	79	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.026	32	0.0061	< 0.0000019	0.0019	0.0011	< 0.10	1.1	< 0.00020	2.2	< 0.00010	26	1.7	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	16-Aug-2024	Grab	0.017	< 0.00060	< 0.00020	0.085	< 0.0010	0.046	< 0.000020	88	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	35	0.0073	< 0.0000019	0.0019	0.00054	< 0.10	1.3	< 0.00020	2.3	< 0.00010	33	1.7	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
	12-Sep-2024	Grab	0.018	< 0.00060	0.00023	0.080	< 0.0010	0.036	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.070	0.00082	< 0.020	33	0.0063	< 0.0000019	0.0020	0.00061	< 0.10	1.2	< 0.00020	2.2	< 0.00010	33	1.6	< 0.00020	< 0.0010	0.0016	0.0012	< 0.0010	< 0.0030

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00017**	**---**	**0.0089**	**---**	**0.00257**	**0.3**	**0.00359**	**---**	**---**	**0.37**	**0.000026**	**0.073**	**0.1028**	**---**	**---**	**0.001**	**---**	**0.00025**	**---**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.019**
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00037**	**---**	**0.0089**	**---**	**0.004**	**0.3**	**0.007**	**---**	**---**	**0.29**	**0.000026**	**0.073**	**0.1500**	**---**	**---**	**0.001**	**---**	**0.00025**	**---**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.039**
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	**---**	**5**	**0.007**	**None required**	**0.05**	**---**	**2**	**---**	**0.005**	**---**	**---**	**0.12**	**0.001**	**---**	**---**	**---**	**---**	**0.05**	**---**	**---**	**---**	**7**	**---**	**---**	**---**	**0.02**	**---**	**---**
Federal Environmental Quality Guidelines - Mackenzie River [#7]			**0.76**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0011**	**---**	**0.33**	**0.0059**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			**0.72**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0017**	**---**	**0.29**	**0.0075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**
Relative Percent Difference (RPD) Report																																		
AEMP-DS-02 (Marine Dock)	20-Jul-2024	Grab	**1.8** [#1]	< 0.00060	0.0020	0.086	< 0.0010	0.022	0.000093	39	0.0030	**0.0018** [#7]	**0.0043** [#1]	**3.3** [#1,7]	0.0020	< 0.026	12	0.055	0.0000068 [#4]	0.0010	0.0071	< 0.10	1.5	0.00037	3.3	< 0.00010	8.8	0.32	< 0.00020	< 0.0010	0.018	0.00091	0.0057	**0.035** [#1]
(Duplicate)	20-Jul-2024	Grab	**1.8** [#1]	< 0.00060	0.0018	0.086	< 0.0010	0.022	0.00010	39	0.0029	**0.0017** [#7]	**0.0043** [#1]	**3.4** [#1,7]	0.0018	< 0.026	12	0.054	0.0000057 [#4]	0.0012	0.0076	< 0.10	1.6	0.00035	3.4	< 0.00010	8.9	0.33	< 0.00020	< 0.0010	0.018	0.00093	0.0058	**0.040** [#1]
RPD(%)			**0.0%**	**---**	**10.5%**	**0.0%**	**---**	**0.0%**	**7.3%**	**0.0%**	**3.4%**	**5.7%**	**0.0%**	**3.0%**	**10.5%**	**---**	**0.0%**	**1.8%**	**17.6%**	**18.2%**	**6.8%**	**---**	**6.5%**	**5.6%**	**3.0%**	**---**	**1.1%**	**3.1%**	**---**	**---**	**0.0%**	**2.2%**	**1.7%**	**13.3%**
AEMP-DS-02 (Marine Dock)	16-Aug-2024	Grab	**3.4** [#1,2]	< 0.00060	**0.0031**	**0.17**	< 0.0010	0.025	**0.00022** [#1]	61	0.0049	**0.0035** [#7]	**0.0074** [#1]	**7.7** [#1,7]	**0.0043** [#1]	< 0.020	21	**0.18** [#2]	0.000013	**0.0017**	**0.011**	0.20	1.9	0.00047	5.7	< 0.00010	14	0.61	< 0.00020	< 0.0010	0.036	**0.0012**	0.0088	**0.058** [#1]
(Duplicate)	16-Aug-2024	Grab	**3.6** [#1,2]	< 0.00060	**0.0032**	**0.16**	< 0.0010	0.025	**0.00024** [#1]	60	0.0051	**0.0035** [#7]	**0.0076** [#1]	**7.4** [#1,7]	**0.0041** [#1]	< 0.020	21	**0.18** [#2]	0.000014	**0.0017**	**0.011**	0.20	2.0	0.00044	5.6	< 0.00010	14	0.58	< 0.00020	< 0.0010	0.035	**0.0012**	0.0092	**0.089** [#1]
RPD(%)			**5.7%**	**---**	**3.2%**	**6.1%**	**---**	**0.0%**	**8.7%**	**1.7%**	**4.0%**	**0.0%**	**2.7%**	**4.0%**	**4.8%**	**---**	**0.0%**	**0.0%**	**7.4%**	**0.0%**	**0.0%**	**0.0%**	**5.1%**	**6.6%**	**1.8%**	**---**	**0.0%**	**5.0%**	**---**	**---**	**2.8%**	**0.0%**	**4.4%**	**42.2%**
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	Grab	0.074	< 0.00060	0.00022	0.082	< 0.0010	0.040	< 0.000020	84	< 0.0010	< 0.00030	< 0.0010	0.18	< 0.00020	< 0.020	32	0.011	< 0.0000019	**0.0059**	0.00075	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030
(Duplicate)	13-Sep-2024	Grab	0.059	< 0.00060	0.00023	0.084	< 0.0010	0.050	< 0.000020	86	< 0.0010	< 0.00030	< 0.0010	0.16	< 0.00020	< 0.020	33	0.011	< 0.0000019	0.0019	0.00061	< 0.10	1.2	< 0.00020	2.2	< 0.00010	34	1.6	< 0.00020	< 0.0010	0.0019	0.0011	< 0.0010	< 0.0030
RPD(%)			**22.6%**	**---**	**4.4%**	**2.4%**	**---**	**22.2%**	**---**	**2.4%**	**---**	**---**	**---**	**11.8%**	**---**	**---**	**3.1%**	**0.0%**	**---**	**102.6%**	**20.6%**	**---**	**0.0%**	**---**	**0.0%**	**---**	**0.0%**	**0.0%**	**---**	**---**	**---**	**8.7%**	**---**	**---**

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1] denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life.
   http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)
   Lead guideline value for Mackenzie River = 0.0036. Lead guideline value for Bosworth Creek = 0.007. This guideline value is based on hardness for both rivers.
   Aluminum:
   Standard varies with pH.
   pH < 6.5 = 0.005 mg/L
   pH >= 6.5 = 0.1 mg/L
   Boron:
   Guideline based on long term exposure
   Cadmium:
   Guideline based on long term exposure
   Chromium (Total):
   Limit is for Chromium(III).
   Copper:
   Guideline is hardness dependent. Presented guideline set to lower limit.
   Lead:
   Guideline is hardness dependent. Presented guideline set to lower limit.
   Mercury:
   Guideline for Inorganic mercury
   Nickel:
   Guideline is hardness dependent. Presented guideline set to lower limit.
   Silver:
   Guideline based on long term exposure
   Uranium:
   Guideline based on long term exposure
7. Superscript [#2] denotes values exceeding
   (Health Canada. 2024. Guidelines for Canadian Drinking Water Quality. Summary Table. Maximum Acceptable Concentration.
   Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.
   August 2024.)
   Calcium:
   Guideline value not necessary. Calcium contributes to hardness.
   Chromium (Total):
   MAC established for total chromium to protect from Chromium (VI).
8. Superscript [#3] - Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
9. Superscript [#4] - Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.
10. Superscript [#5] - Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.
11. Superscript [#6] - Matrix spike exceeds acceptance limits due to probable matrix interference.
12. Superscript [#7] denotes values exceeding
    (ECCC. 2024. Federal Environmental Quality Guidelines Summary Table. Environment and Climate Change Canada, Ottawa, Ontario, November 2024.)

Table 4

Surface Water Analytical Results: Total Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Potassium (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Sodium (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			0.1	---	0.005	---	---	1.5	0.00017	---	0.0089	---	0.00257	0.3	0.00359	---	---	0.37	0.000026	0.073	0.1028	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.019
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			0.1	---	0.005	---	---	1.5	0.00037	---	0.0089	---	0.004	0.3	0.007	---	---	0.29	0.000026	0.073	0.1500	---	---	0.001	---	0.00025	---	---	0.0008	---	---	0.015	---	0.039
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			2.9	0.006	0.01	2	---	5	0.007	None required	0.05	---	2	---	0.005	---	---	0.12	0.001	---	---	---	---	0.05	---	---	---	7	---	---	---	0.02	---	---
Federal Environmental Quality Guidelines - Mackenzie River [#7]			0.76	---	---	---	---	---	---	---	0.005	0.0011	---	0.33	0.0059	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---
Federal Environmental Quality Guidelines -- Bosworth Creek [#7]			0.72	---	---	---	---	---	---	---	0.005	0.0017	---	0.29	0.0075	---	---	---	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---

Chromium:
Guideline is based on chromium(VI)

Iron:
Guideline is DOC and pH dependent and presented guidelines are set based on 25th percentile of pH and DOC at upstream sites for each watercourse.

Lead:
Guideline is DOC and hardness dependent and presented guidelines are set based on 25th percentile of hardness and DOC at upstream sites for each watercourse.

Above UCL
Equal to UCL
Below LCL
Equal to LCL

Table 5

Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)	Sample Comment
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			0.1	---	0.005	---	---	1.5	0.00017	0.0089	---	0.00257	0.3	0.0036	---	---	0.000026	0.073	0.1028	---	0.001	---	0.00025	---	0.0008	---	---	0.015	---	0.019	
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			0.1	---	0.005	---	---	1.5	0.00037	0.0089	---	0.004	0.3	0.0036	---	---	0.000026	0.073	0.1500	---	0.001	---	0.00025	---	0.0008	---	---	0.015	---	0.039	
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			2.9	0.006	0.01	2	---	5	0.007	0.05	---	2	---	0.005	---	0.12	0.001	---	---	---	0.05	---	---	7	---	---	---	0.02	---	---	
Federal Environmental Quality Guidelines - Mackenzie River [#4]			0.76	---	---	---	---	---	---	0.005	0.0011	---	0.33	0.0059	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---	
Federal Environmental Quality Guidelines - Bosworth Creek [#4]			0.72	---	---	---	---	---	---	0.005	0.0017	---	0.29	0.0075	---	---	---	---	---	---	---	---	---	2.5	---	---	---	---	0.12	---	
NW AEMP V5																															
MACKENZIE RIVER																															
Mackenzie Upstream Data UCL			3.39	---	0.0025	0.107	---	---	0.00016	0.0055	---	0.0067	5.2	---	---	---	---	0.0017	0.0090	---	0.00067	---	---	---	---	---	---	0.0012	---	0.0260	
Mackenzie Upstream Data LCL			<0.003	---	<0.0002	0.022	---	---	<0.00002	<0.0010	---	<0.0010	<0.060	---	---	---	---	0.0004	<0.0005	---	<0.00020	---	---	---	---	---	---	0.0004	---	<0.0030	
DOWNSTREAM																															
AEMP-DS-02 (Marine Dock)	17-Aug-2017	Grab	0.067	< 0.00060	0.00043	0.051	< 0.0010	< 0.020	0.000030	< 0.0010	< 0.00030	0.0019	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.0012	0.0015	< 0.10	0.00044	1.9	< 0.00010	0.25	< 0.00020	< 0.0010	< 0.0010	0.00085	0.0011	0.0049	
	21-Aug-2017	Grab	0.035	< 0.00060	0.00035	0.044	< 0.0010	< 0.020	0.000032	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00086	0.0011	< 0.10	0.00026	1.6	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00065	< 0.0010	< 0.0030	
	16-Sep-2017	Grab	0.033	< 0.00060	0.00027	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	0.0041	< 0.0000020	0.00070	0.0010	< 0.10	< 0.00020	1.5	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00053	< 0.0010	< 0.0030	
	16-Oct-2017	Grab	0.015	< 0.00060	0.00035	0.036	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0010	< 0.060	< 0.00020	< 0.020	0.0049	< 0.0000020	0.00070	0.0011	< 0.10	0.00025	1.4	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00054	< 0.0010	< 0.0030	
	23-Jun-2018	Grab	0.13 [#1]	< 0.00060	0.00031	0.047	< 0.0010	< 0.020	0.000023	< 0.0010	< 0.00030	0.0030 [#1]	0.20	0.00026	< 0.020	0.011	0.0000026	0.00079	0.0012	< 0.10	0.00021	1.4	< 0.00010	0.18	< 0.00020	< 0.0010	0.0010	0.00050	< 0.0010	0.0078	
	13-Aug-2018	Grab	0.048	< 0.00060	0.00036	0.044	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00086	0.0017	< 0.10	0.00022	1.5	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00067	< 0.0010	< 0.0030	
	17-Oct-2018	Grab	0.0097	< 0.00060	0.00023	0.039	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00077	0.00099	< 0.10	< 0.00020	1.4	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.00055	< 0.0010	< 0.0030	
	03-Jun-2019	Grab	0.018	< 0.00060	0.00029	0.040	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	0.0048	< 0.0000020	0.00081	0.00096	< 0.10	0.00028	1.4	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.00056	< 0.0010	< 0.0030	
	28-Aug-2019	Grab	0.022	< 0.00060	0.00024	0.042	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00079	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00091	0.00088	< 0.10	0.00021	1.5	< 0.00010	0.31	< 0.00020	< 0.0010	< 0.0010	0.00066	< 0.0010	< 0.0030	
	03-Oct-2019	Grab	0.014	< 0.00060	0.00039	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0021	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00091	0.00086	< 0.10	0.00026	1.4	< 0.00010	0.27	< 0.00020	< 0.0010	0.0012	0.00057	< 0.0010	0.0098	
	10-Jun-2020	Grab	0.013	< 0.00060	0.00044	0.041	< 0.0010	< 0.020	0.000021	0.0038	< 0.00030	0.0062 [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0015	0.0034	< 0.10	0.00039	1.5	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00055	< 0.0010	< 0.0030	
	24-Jul-2020	Grab	0.018	< 0.00060	0.00026	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00086	0.0012	< 0.10	< 0.00020	1.5	< 0.00010	0.19	< 0.00020	0.0028	< 0.0010	0.00062	< 0.0010	< 0.0030	
	18-Sep-2020	Grab	0.015	< 0.00060	0.00023	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00075	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00066	0.0013	< 0.10	0.00027	1.7	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.00056	< 0.0010	< 0.0030	
	06-Jun-2021	Grab	0.015	< 0.00060	0.00041	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	0.066	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00066	0.0015	< 0.10	0.00027	1.8	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00035	< 0.0010	< 0.0030	
	18-Aug-2021	Grab	0.025	< 0.00060	0.00034	0.042	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	0.000011	0.00086	0.0014	< 0.10	0.00022	1.5	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00061	< 0.0010	< 0.0030	
	22-Aug-2021	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.0000019	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	17-Sep-2021	Grab	0.014	< 0.00060	0.00035	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0031 [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00075	0.00093	< 0.10	0.00020	1.5	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00057	< 0.0010	< 0.0030	
	31-Mar-2022	Grab	0.019	< 0.00060	0.00026	0.032	< 0.0010	< 0.020	0.00016	< 0.0010	< 0.00030	0.0013	< 0.060	0.00021	< 0.020	< 0.0040	< 0.0000019	0.00055	0.00063	< 0.10	< 0.00020	1.5	< 0.00010	0.21	< 0.00020	< 0.0010	0.0018	0.00049	< 0.0010	0.0042	
	12-Jun-2022	Grab	0.016	< 0.00060	0.00033	0.033	< 0.0010	< 0.020	0.000023	< 0.0010	< 0.00030	0.0017	0.064	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0020	0.0024	< 0.10	0.00051	1.6	< 0.00010	0.16	< 0.00020	< 0.0010	0.0011	0.00076	< 0.0010	< 0.0030	
	06-Aug-2022	Grab	0.12 [#1]	< 0.00060	0.00053	0.057	< 0.0010	< 0.020	0.000030	< 0.0010	0.00032	0.0024	0.34 [#1,4]	0.00058	< 0.020	0.030	< 0.0000019	0.00080	0.0017	< 0.10	0.00024	2.0	< 0.00010	0.24	< 0.00020	< 0.0010	0.0027	0.00061	< 0.0010	0.0057	
	25-Sep-2022	Grab	0.011	< 0.00060	0.00029	0.049	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0031 [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0018	0.0013	< 0.10	0.00022	1.4	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00057	< 0.0010	0.0031	
	09-Mar-2023	Grab	0.0033	< 0.00060	0.00030	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	0.00052	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00053	0.0011	< 0.10	< 0.00020	1.4	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00013	< 0.0010	0.0064	
	25-Jul-2023	Grab	0.023	< 0.00060	0.00032	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0014	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000020	0.00083	0.0012	< 0.10	0.00024	1.6	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00061	< 0.0010	< 0.0030	
	18-Aug-2023	Grab	0.021	< 0.00060	0.00034	---	< 0.0010	---	< 0.000020	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	---	< 0.0040	< 0.0000019	0.0011	0.00099	---	0.00029	---	< 0.00010	---	< 0.00020	< 0.0010	< 0.0010	0.00063	< 0.0010	< 0.0030	
	24-Sep-2023	Grab	0.021	< 0.00060	0.00032	0.050	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00083	0.00099	< 0.10	0.00024	1.4	< 0.00010	0.29	< 0.00020	< 0.0010	< 0.0010	0.00065	< 0.0010	< 0.0030	
	18-Mar-2024	Grab	< 0.0030	< 0.00060	0.00021	0.040	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	0.00049	< 0.020	< 0.0040	< 0.000025 [#3]	0.00063	0.00085	< 0.10	< 0.00020	1.7	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00049	< 0.0010	0.0036	
	20-Jul-2024	Grab	0.041	< 0.00060	0.00031	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	0.029	< 0.0040	< 0.0000019	0.00080	0.00082	< 0.10	0.00030	1.5	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00075	< 0.0010	< 0.0030	
(Duplicate)	20-Jul-2024	Grab	0.040	< 0.00060	0.00034	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.031	< 0.0040	< 0.0000019	0.00090	0.00095	< 0.10	0.00034	1.5	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00074	< 0.0010	< 0.0030	
	16-Aug-2024	Grab	0.020	< 0.00060	0.00037	0.064	< 0.0010	0.021	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	0.040	< 0.0000019	0.0015	0.00099	< 0.10	0.00033	1.8	< 0.00010	0.61	< 0.00020	< 0.0010	< 0.0010	0.00086	< 0.0010	< 0.0030	
(Duplicate)	16-Aug-2024	Grab	0.021	< 0.00060	0.00043	0.064	< 0.0010	0.021	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.039	< 0.0000019	0.0012	0.00090	< 0.10	0.00032	1.7	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.00085	< 0.0010	< 0.0030	
	13-Sep-2024	Grab	0.058	< 0.00060	0.00025	0.047	< 0.0010	< 0.020	0.000033	< 0.0010	< 0.00030	< 0.0010	< 0.060	0.00036	< 0.020	< 0.0040	< 0.0000019	0.0012	0.0011	< 0.10	0.00030	1.2	< 0.00010	0.31	< 0.00020	< 0.0010	< 0.0010	0.00072	< 0.0010	< 0.0030	
AEMP-DS-03 (Island 3)	16-Sep-2017	Grab	0.051	< 0.00060	0.00025	0.047	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00092	0.0014	< 0.10	0.00035	1.8	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00072	< 0.0010	< 0.0030	
	16-Oct-2017	Grab	0.024	< 0.00060	0.00028	0.047	< 0.0010	< 0.020	0.000022	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.0010	0.0017	< 0.10	0.00034	1.7	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00076	< 0.0010	< 0.0030	
	23-Jun-2018	Grab	0.047	< 0.00060	0.00036	0.044	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00097	0.0011	< 0.10	0.00029	1.6	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00065	< 0.0010	< 0.0030	
	14-Aug-2018	Grab	0.090	< 0.00060	0.00028	0.048	< 0.0010	< 0.020	0.000023	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000031	0.00090	0.0015	< 0.10	0.00034	1.6	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00083	< 0.0010	< 0.0030	
	18-Oct-2018	Grab	0.0060	< 0.00060	0.00031	0.047	< 0.0010	0.020	< 0.000020	< 0.0010	< 0.00030	0.00088	< 0.060	< 0.00020	< 0.020	0.0093	< 0.0000020	0.00075	0.00092	< 0.10	< 0.00020	1.4	< 0.00010	0.27	< 0.00020	< 0.0010	< 0.0010	0.00056	< 0.0010	< 0.0030	
	10-Jun-2019	Grab	0.020	< 0.00060	0.00021	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00085	0.0014	< 0.10	0.00026	1.7	< 0.00010	0.18	< 0.00020	< 0.0010	< 0.0010	0.00066	< 0.0010	< 0.0030	
	26-Aug-2019	Grab	0.047	< 0.00060	0.00020	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00094	0.0014	< 0.10	0.00036	1.8	< 0.00010	0.27	< 0.00020	< 0.0010	< 0.0010	0.00084	< 0.0010	< 0.0030	
	01-Oct-2019	Grab	0.032	< 0.00060	0.00033	0.051	< 0.0010	< 0.020	0.000021	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.0011	0.0017	< 0.10	0.00057	1.8	< 0.00010	0.24	< 0.00020	< 0.0010	0.0011	0.00078	< 0.0010	0.0057	
	12-Jun-2020	Grab	0.023	< 0.00060	0.00030	0.042	< 0.0010	< 0.020	0.000022	< 0.0010	< 0.00030	0.0019	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000038	0.00090	0.0017	< 0.10	0.00034	1.9	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030	
	28-Jul-2020	Grab	0.0084	< 0.00060	0.00032	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.00020	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0013	0.0014	< 0.10	0.00047	1.8	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00083	0.0020	0.0084	
	22-Sep-2020	Grab	0.026	< 0.00060	0.00039	0.044	< 0.0010	< 0.020	0.000026	< 0.0010	< 0.00030	0.0023	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0010	0.0015	< 0.10	0.00032	1.9	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00074	< 0.0010	< 0.0030	
	07-Jun-2021	Grab	0.034	< 0.00060	0.00025	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00078	0.0015	< 0.10	0.00024	2.0	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00053	< 0.0010	< 0.0030	
(Duplicate)	07-Jun-2021	Grab	0.026	< 0.00060	0.00026	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0016	0.070	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00074	0.0018	< 0.10	0.00031	2.1	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00046	< 0.0010	< 0.0030	
	19-Aug-2021	Grab	0.036	< 0.00060	0.00032	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0045 [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00094	0.0018	< 0.10	0.00044	1.8	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00075	< 0.0010	0.0050	
	18-Sep-2021	Grab	0.044	< 0.00060	0.00049	0.047	< 0.0010	< 0.020	0.000021	< 0.0010	< 0.00030	0.0014	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000020	0.00096	0.0017	< 0.10	0.00035	1.8	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00081	< 0.0010	< 0.0030	
	31-Mar-2022	Grab	0.0054	< 0.00060	0.00040	0.061	< 0.0010	< 0.020	< 0.000020	0.0017	< 0.00030	0.0027 [#1]	< 0.060	0.019 [#1,2,4]	< 0.020	< 0.0040	0.0000051	0.0012	0.0017	< 0.10	0.00035	2.5	< 0.00010	0.29	< 0.00020	< 0.0010	< 0.0010	0.00082	< 0.0010	0.013	
	14-Jun-2022	Grab	0.022	< 0.00060	0.00030	0.039	< 0.0010	< 0.020	0.000025	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000022	0.00082	0.0015	< 0.10	0.00026	1.6	< 0.00010	0.16	< 0.00020	0.0033	< 0.0010	0.00062	< 0.0010	< 0.0030	
	06-Aug-2022	Grab	0.039	< 0.00060	0.00038	0.053	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000024	0.0010	0.0015	< 0.10	0.00035	1.9	< 0.00010	0.23	< 0.00020	< 0.0010	0.0011	0.00070	< 0.0010	0.0037	
(Duplicate)	06-Aug-2022	Grab	0.038	< 0.00060	0.00031	0.051	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0023	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0016	< 0.10	0.00039	2.0	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00068	< 0.0010	0.0079	
	25-Sep-2022	Grab	0.029	< 0.00060	0.00032	0.051	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0031 [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0016	< 0.10	0.00035	1.6	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00071	< 0.0010	0.0068	

Table 5

Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)	Sample Comment
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00017**	**0.0089**	**---**	**0.00257**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1028**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.019**	
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00037**	**0.0089**	**---**	**0.004**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1500**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.039**	
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	**---**	**5**	**0.007**	**0.05**	**---**	**2**	**---**	**0.005**	**---**	**0.12**	**0.001**	**---**	**---**	**---**	**0.05**	**---**	**---**	**7**	**---**	**---**	**---**	**0.02**	**---**	**---**	
Federal Environmental Quality Guidelines - Mackenzie River [#4]			**0.76**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0011**	**---**	**0.33**	**0.0059**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
Federal Environmental Quality Guidelines - Bosworth Creek [#4]			**0.72**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0017**	**---**	**0.29**	**0.0075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
	09-Mar-2023	Grab	0.0075	< 0.00060	0.00046	0.066	< 0.0010	< 0.020	0.000024	0.0010	< 0.00030	0.0018	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0058	< 0.10	0.00048	2.1	< 0.00010	0.32	< 0.00020	< 0.0010	< 0.0010	0.00079	< 0.0010	0.0036	
	25-Jul-2023	Grab	0.039	< 0.00060	0.00031	0.050	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0011	< 0.10	0.00037	1.6	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00083	< 0.0010	< 0.0030	
	19-Aug-2023	Grab	0.036	< 0.00060	0.00032	0.051	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0023	< 0.060	< 0.00020	< 0.020	0.0044	< 0.0000019	0.0011	0.0016	< 0.10	0.00051	1.7	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00092	< 0.0010	< 0.0030	
	25-Sep-2023	Grab	0.030	< 0.00060	0.00026	0.052	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0017	< 0.10	0.00038	1.6	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.00082	< 0.0010	< 0.0030	
	18-Mar-2024	Grab	0.0033	< 0.00060	0.00029	0.061	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.000025 [#3]	0.0010	0.0015	< 0.10	0.00039	2.3	< 0.00010	0.33	< 0.00020	< 0.0010	< 0.0010	0.00084	< 0.0010	0.0049	
	19-Jul-2024	Grab	0.048	< 0.00060	0.00023	0.050	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000087	0.00095	0.00098	< 0.10	0.00044	1.6	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00083	< 0.0010	< 0.0030	
	15-Aug-2024	Grab	0.047	< 0.00060	0.00039	0.053	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0012	0.0013	< 0.10	0.00050	1.7	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00095	< 0.0010	< 0.0030	
	17-Sep-2024	Grab	0.060	< 0.00060	0.00028	0.047	< 0.0010	< 0.020	0.000031	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0010	0.0019	< 0.10	0.00038	1.6	< 0.00010	0.25	< 0.00020	< 0.0010	< 0.0010	0.00083	< 0.0010	< 0.0030	
AEMP-DS-04 (Refinery)	21-Aug-2017	Grab	0.033	< 0.00060	0.00034	0.043	< 0.0010	< 0.020	0.000028	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00084	0.0011	< 0.10	0.00032	1.5	< 0.00010	0.22	< 0.00020	0.0010	< 0.0010	0.00065	< 0.0010	< 0.0030	
(Duplicate)	21-Aug-2017	Grab	0.030	< 0.00060	0.00036	0.042	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0014	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00083	0.00089	< 0.10	0.00032	1.5	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00059	< 0.0010	< 0.0030	
	16-Sep-2017	Grab	0.026	< 0.00060	0.00022	0.040	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.00075**	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00072	0.0011	< 0.10	0.00022	1.4	< 0.00010	0.22	< 0.00020	0.0019	< 0.0010	0.00054	< 0.0010	< 0.0030	
	16-Oct-2017	Grab	0.012	< 0.00060	0.00036	0.044	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.00070**	< 0.060	< 0.00020	< 0.020	0.022	< 0.0000020	0.00082	0.0010	< 0.10	< 0.00020	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00060	< 0.0010	< 0.0030	
	23-Jun-2018	Grab	0.028	< 0.00060	0.00025	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000031	0.00081	0.0010	< 0.10	< 0.00020	1.4	< 0.00010	0.16	< 0.00020	< 0.0010	< 0.0010	0.00053	< 0.0010	< 0.0030	
	13-Aug-2018	Grab	0.048	< 0.00060	0.00027	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000022	0.00076	0.0014	< 0.10	0.00026	1.4	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00062	< 0.0010	< 0.0030	
	17-Oct-2018	Grab	0.0077	< 0.00060	0.00044	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.00092**	< 0.060	< 0.00020	< 0.020	0.013	< 0.0000020	0.00081	0.00086	< 0.10	0.00025	1.3	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00050	< 0.0010	< 0.0030	
(Duplicate)	17-Oct-2018	Grab	0.0088	< 0.00060	0.00046	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.00081**	< 0.060	< 0.00020	< 0.020	0.018	< 0.0000020	0.00087	0.00091	< 0.10	0.00024	1.4	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00048	< 0.0010	< 0.0030	
	03-Jun-2019	Grab	0.016	< 0.00060	0.00033	0.037	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	0.0098	0.0000020	0.00089	0.0012	< 0.10	0.00023	1.4	< 0.00010	0.19	< 0.00020	0.0018	< 0.0010	0.00060	< 0.0010	< 0.0030	
	25-Aug-2019	Grab	0.022	< 0.00060	0.00030	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.00084**	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00085	0.00092	< 0.10	0.00024	1.5	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00069	< 0.0010	< 0.0030	
	03-Oct-2019	Grab	0.014	< 0.00060	0.00043	0.062	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.00070**	< 0.060	< 0.00020	< 0.020	0.029	< 0.0000020	0.00081	0.0025	< 0.10	0.00022	1.4	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00057	< 0.0010	< 0.0030	
	10-Jun-2020	Grab	0.012	< 0.00060	0.00030	0.036	< 0.0010	< 0.020	0.000023	0.0042	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00084	0.0039	< 0.10	0.00030	1.5	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00058	0.0013	< 0.0030	
	24-Jul-2020	Grab	0.018	< 0.00060	0.00026	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00097	0.0013	< 0.10	< 0.00020	1.5	< 0.00010	0.19	< 0.00020	0.0020	< 0.0010	0.00068	< 0.0010	< 0.0030	
(Duplicate)	24-Jul-2020	Grab	0.018	< 0.00060	0.00025	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00062	0.0010	< 0.10	0.00021	1.5	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.00063	< 0.0010	< 0.0030	
	18-Sep-2020	Grab	0.016	< 0.00060	0.00029	0.040	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00072	0.0022	< 0.10	0.00022	1.8	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.00053	< 0.0010	< 0.0030	
(Duplicate)	18-Sep-2020	Grab	0.017	< 0.00060	0.00031	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00076	0.0012	< 0.10	0.00027	1.7	< 0.00010	0.18	< 0.00020	< 0.0010	< 0.0010	0.00057	< 0.0010	< 0.0030	
	06-Jun-2021	Grab	0.094	< 0.00060	0.00055	0.044	< 0.0010	< 0.020	< 0.000020	0.0014	< 0.00030	0.0017	0.17	< 0.00020	< 0.020	0.0073	< 0.0000019	0.00060	0.0016	< 0.10	0.00025	2.0	< 0.00010	0.17	< 0.00020	< 0.0010	0.0020	**0.00040**	< 0.0010	< 0.0030	
	18-Aug-2021	Grab	0.026	< 0.00060	0.00038	0.043	< 0.0010	0.054	< 0.000020	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	< 0.020	0.0044	---	0.00083	0.0013	< 0.10	0.00030	1.5	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.00064	< 0.0010	< 0.0030	
	22-Aug-2021	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.0000019	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	17-Sep-2021	Grab	0.014	< 0.00060	0.00030	0.044	< 0.0010	0.042	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00068	0.00095	< 0.10	0.00022	1.5	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00052	< 0.0010	< 0.0030	
	12-Jun-2022	Grab	0.013	< 0.00060	0.00033	0.043	< 0.0010	< 0.020	0.000026	< 0.0010	< 0.00030	**0.0030** [#1]	0.076	< 0.00020	< 0.020	0.0059	< 0.0000019	**0.0034**	0.0020	< 0.10	0.00034	1.6	< 0.00010	0.16	< 0.00020	0.0016	0.0013	0.0011	< 0.0010	< 0.0030	
	06-Aug-2022	Grab	0.011	< 0.00060	0.00050	0.054	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.067	< 0.0000019	0.0011	0.0012	< 0.10	0.00028	1.6	< 0.00010	0.20	< 0.00020	< 0.0010	0.0011	0.00062	< 0.0010	< 0.0030	
(Duplicate)	06-Aug-2022	Grab	0.014	< 0.00060	0.00066	0.055	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	0.069	< 0.0000019	0.0010	0.0011	< 0.10	0.00030	1.5	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00067	< 0.0010	< 0.0030	
	24-Sep-2022	Grab	0.0060	< 0.00060	0.00055	0.065	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.068	< 0.0000019	0.00089	0.0011	< 0.10	0.00026	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00062	< 0.0010	< 0.0030	
(Duplicate)	24-Sep-2022	Grab	0.0071	< 0.00060	0.00058	0.065	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.073	< 0.0000019	0.00089	0.00092	< 0.10	0.00026	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00061	< 0.0010	< 0.0030	
	11-Mar-2023	Grab	0.0044	< 0.00060	0.00023	0.035	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00054	< 0.00050	< 0.10	< 0.00020	1.3	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	**0.00040**	< 0.0010	< 0.0030	
	26-Jul-2023	Grab	0.026	< 0.00060	0.00027	0.047	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00097	0.00095	< 0.10	0.00027	1.5	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00069	< 0.0010	0.0044	
(Duplicate)	26-Jul-2023	Grab	0.029	< 0.00060	0.00033	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0018	< 0.060	0.00034	< 0.020	< 0.0040	< 0.0000019	0.0010	0.0016	< 0.10	0.00031	1.4	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00073	< 0.0010	0.0077	
	18-Aug-2023	Grab	0.022	< 0.00060	0.00034	---	< 0.0010	---	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	---	0.0040	< 0.0000019	0.00086	0.00083	---	0.00034	---	< 0.00010	---	< 0.00020	< 0.0010	< 0.0010	0.00066	< 0.0010	< 0.0030	
	24-Sep-2023	Grab	0.017	< 0.00060	0.00028	0.043	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00081	0.0011	< 0.10	0.00022	1.3	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00064	< 0.0010	< 0.0030	
	18-Mar-2024	Grab	< 0.0030	< 0.00060	< 0.00020	0.040	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00061	0.00069	< 0.10	< 0.00020	1.6	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00049	< 0.0010	< 0.0030	
	20-Jul-2024	Grab	0.038	< 0.00060	0.00033	0.047	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.028	0.0042	< 0.0000019	0.00091	0.0011	< 0.10	0.00036	1.5	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00078	< 0.0010	< 0.0030	
	16-Aug-2024	Grab	0.027	< 0.00060	0.00040	0.053	< 0.0010	0.022	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.025	< 0.0000019	0.00094	0.00094	< 0.10	0.00041	1.5	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00078	< 0.0010	< 0.0030	
	13-Sep-2024	Grab	0.051	< 0.00060	0.00021	0.038	< 0.0010	< 0.020	0.000029	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00091	0.0012	< 0.10	0.00025	1.2	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.00070	< 0.0010	< 0.0030	
AEMP-DS-05 (Radar North)	23-Jun-2018	Grab	0.037	< 0.00060	0.00027	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.0011	0.0011	< 0.10	0.00027	1.5	< 0.00010	0.15	< 0.00020	< 0.0010	< 0.0010	0.00059	< 0.0010	0.0031	
	14-Aug-2018	Grab	0.068	< 0.00060	0.00037	0.044	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	0.0043	0.0000022	0.00084	0.0017	< 0.10	0.00024	1.5	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00067	< 0.0010	< 0.0030	
	18-Oct-2018	Grab	0.0074	< 0.00060	0.00021	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.00099**	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00076	0.00097	< 0.10	< 0.00020	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00053	< 0.0010	< 0.0030	
	10-Jun-2019	Grab	0.014	< 0.00060	0.00025	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00076	0.0011	< 0.10	0.00024	1.5	< 0.00010	0.16	< 0.00020	< 0.0010	< 0.0010	0.00055	< 0.0010	< 0.0030	
	26-Aug-2019	Grab	0.038	< 0.00060	< 0.00020	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00079	0.0013	< 0.10	0.00033	1.8	< 0.00010	0.25	< 0.00020	< 0.0010	< 0.0010	0.00079	< 0.0010	< 0.0030	
	01-Oct-2019	Grab	0.023	< 0.00060	0.00024	0.042	< 0.0010	0.020	0.000027	< 0.0010	0.00092	0.0023	**0.91** [#1,4]	< 0.00020	< 0.020	0.054	< 0.0000020	0.00085	0.0030	< 0.10	0.00032	1.7	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00062	< 0.0010	0.011	
	12-Jun-2020	Grab	0.017	< 0.00060	0.00029	0.040	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000043	0.00088	0.0014	< 0.10	0.00042	1.6	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00063	< 0.0010	< 0.0030	
	28-Jul-2020	Grab	0.030	< 0.00060	0.00041	0.044	< 0.0010	0.020	< 0.000020	0.0010	< 0.00030	**0.0033** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0013	0.00097	< 0.10	0.00044	1.7	< 0.00010	0.18	< 0.00020	< 0.0010	< 0.0010	0.00076	< 0.0010	0.0035	
	22-Sep-2020	Grab	0.020	< 0.00060	0.00030	0.041	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00099	0.0014	< 0.10	0.00035	1.8	< 0.00010	0.18	< 0.00020	< 0.0010	< 0.0010	0.00068	< 0.0010	< 0.0030	
	07-Jun-2021	Grab	0.018	< 0.00060	0.00057	0.041	< 0.0010	< 0.020	0.000025	0.0014	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00090	0.0012	< 0.10	0.00039	1.7	< 0.00010	0.15	< 0.00020	< 0.0010	< 0.0010	0.00055	< 0.0010	< 0.0030	
	19-Aug-2021	Grab	0.034	< 0.00060	0.00036	0.045	< 0.0010	0.051	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00084	0.0014	< 0.10	0.00034	1.6	< 0.00010	0.19	< 0.00020	< 0.0010	0.0013	0.00059	< 0.0010	< 0.0030	
(Duplicate)	19-Aug-2021	Grab	0.058	< 0.00060	0.00035	0.046	< 0.0010	0.044	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00085	0.0015	< 0.10	0.00031	1.7	< 0.00010	0.19	< 0.00020	< 0.0010	0.0047	0.00056	< 0.0010	< 0.0030	
	18-Sep-2021	Grab	0.034	< 0.00060	0.00045	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00090	0.0015	< 0.10	0.00035	1.7	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00077	< 0.0010	< 0.0030	
	10-Aug-2022	Grab	0.019	< 0.00060	0.00030	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00083	0.0010	< 0.10	< 0.00020	1.5	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00059	< 0.0010	< 0.0030	
	11-Mar-2023	Grab	< 0.0030	< 0.00060	< 0.00020	0.039	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00053	< 0.00050	< 0.10	0.00022	1.4	< 0.00010	0.29	< 0.00020	< 0.0010	< 0.0010	0.00048	< 0.0010	0.0086	

Table 5

Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)	Sample Comment
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00017**	**0.0089**	**---**	**0.00257**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1028**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.019**	
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00037**	**0.0089**	**---**	**0.004**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1500**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.039**	
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	**---**	**5**	**0.007**	**0.05**	**---**	**2**	**---**	**0.005**	**---**	**0.12**	**0.001**	**---**	**---**	**---**	**0.05**	**---**	**---**	**7**	**---**	**---**	**---**	**0.02**	**---**	**---**	
Federal Environmental Quality Guidelines - Mackenzie River [#4]			**0.76**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0011**	**---**	**0.33**	**0.0059**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
Federal Environmental Quality Guidelines - Bosworth Creek [#4]			**0.72**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0017**	**---**	**0.29**	**0.0075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
	25-Jul-2023	Grab	0.028	< 0.00060	0.00038	0.047	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.0028** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00094	0.0012	< 0.10	0.00033	1.7	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00067	< 0.0010	< 0.0030	
	19-Aug-2023	Grab	0.025	< 0.00060	0.00026	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00089	0.00096	< 0.10	0.00038	1.6	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00074	< 0.0010	< 0.0030	
	26-Sep-2023	Grab	0.023	< 0.00060	0.00028	0.045	< 0.0010	0.022	0.000021	< 0.0010	< 0.00030	< 0.0010	0.10	< 0.00020	< 0.020	0.0080	< 0.0000019	0.00094	0.0012	< 0.10	0.00030	1.5	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00072	< 0.0010	< 0.0030	
	17-Mar-2024	Grab	< 0.0030	< 0.00060	0.00034	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.000024 [#3]	0.00066	0.00086	< 0.10	0.00025	2.0	< 0.00010	0.27	< 0.00020	< 0.0010	< 0.0010	0.00053	< 0.0010	0.0035	
	19-Jul-2024	Grab	0.030	< 0.00060	0.00027	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0014	< 0.060	< 0.00020	0.033	< 0.0040	< 0.0000019	0.00093	0.00092	< 0.10	0.00037	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00077	< 0.0010	< 0.0030	
	15-Aug-2024	Grab	0.035	< 0.00060	0.00043	0.045	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.0037** [#1]	< 0.060	< 0.00020	0.021	< 0.0040	< 0.0000019	0.00098	0.0010	< 0.10	0.00039	1.6	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00078	< 0.0010	< 0.0030	
	17-Sep-2024	Grab	0.038	< 0.00060	0.00027	0.042	< 0.0010	< 0.020	0.000026	< 0.0010	< 0.00030	**0.0026** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00091	0.0014	< 0.10	0.00029	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00071	< 0.0010	0.0031	
AEMP-DS-06 (FGH Blue Fish)	10-Mar-2023	Grab	0.0036	< 0.00060	0.00024	0.063	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00095	0.0011	< 0.10	< 0.00020	2.0	< 0.00010	0.32	< 0.00020	< 0.0010	< 0.0010	0.00079	< 0.0010	0.0058	
(Duplicate)	10-Mar-2023	Grab	0.0044	< 0.00060	0.00023	0.063	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0022	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0017	< 0.10	0.00037	2.1	< 0.00010	0.32	< 0.00020	< 0.0010	< 0.0010	0.00080	< 0.0010	< 0.0030	
	24-Jul-2023	Grab	0.052	< 0.00060	0.00032	0.056	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	0.0048	< 0.0000019	0.0015	0.0012	< 0.10	0.00039	1.5	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.00081	< 0.0010	< 0.0030	
	21-Aug-2023	Grab	0.051	< 0.00060	0.00031	0.059	< 0.0010	0.028	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0011	< 0.10	0.00050	1.6	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00093	< 0.0010	< 0.0030	
	03-Oct-2023	Grab	0.048	< 0.00060	0.00021	0.062	< 0.0010	< 0.020	0.000023	< 0.0010	< 0.00030	**0.0026** [#1]	< 0.060	< 0.00020	< 0.020	0.0059	< 0.0000019	0.00086	0.0028	< 0.10	0.00059	1.5	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.00075	< 0.0010	0.0032	
	15-Mar-2024	Grab	0.0052	< 0.00060	< 0.00020	0.066	< 0.0010	< 0.020	0.000021	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00086	0.0012	< 0.10	0.00035	2.2	< 0.00010	0.37	< 0.00020	< 0.0010	< 0.0010	0.00075	< 0.0010	< 0.0030	
	17-Jul-2024	Grab	0.061	< 0.00060	0.00028	0.057	< 0.0010	< 0.020	0.000025	< 0.0010	< 0.00030	0.0018	< 0.060	< 0.00020	< 0.020	0.013	< 0.0000019	0.0011	0.0011	< 0.10	0.00054	1.8	< 0.00010	0.27	< 0.00020	< 0.0010	< 0.0010	0.00082	< 0.0010	< 0.0030	
	14-Aug-2024	Grab	0.063	< 0.00060	0.00029	0.054	< 0.0010	< 0.020	0.000026	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00096	0.0012	< 0.10	0.00048	1.7	< 0.00010	0.29	< 0.00020	< 0.0010	< 0.0010	0.00081	< 0.0010	< 0.0030	
	18-Sep-2024	Grab	0.094	< 0.00060	0.00026	0.052	< 0.0010	< 0.020	0.000030	< 0.0010	< 0.00030	0.0023	0.062	< 0.00020	< 0.020	0.0058	< 0.0000019	0.00079	0.0027	< 0.10	0.00056	1.3	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00076	< 0.0010	0.0058	
AEMP-DS-07 (FGH Ramparts)	17-Jul-2024	Grab	0.036	< 0.00060	0.00025	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00099	0.00084	< 0.10	0.00039	1.8	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00070	< 0.0010	< 0.0030	
	14-Aug-2024	Grab	0.032	< 0.00060	0.00032	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0043	< 0.0000019	0.00099	0.00097	< 0.10	0.00040	1.7	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00079	< 0.0010	< 0.0030	
	18-Sep-2024	Grab	0.050	< 0.00060	0.00032	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0010	0.0016	< 0.10	0.00039	1.3	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00086	< 0.0010	< 0.0030	
AEMP-DS-08 (Radar South)	19-Jul-2024	Grab	0.036	< 0.00060	0.00030	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	0.00073	< 0.020	< 0.0040	< 0.0000019	0.00085	0.0010	< 0.10	0.00036	1.5	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00072	< 0.0010	< 0.0030	
	15-Aug-2024	Grab	0.036	< 0.00060	0.00033	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.0037** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0011	< 0.10	0.00041	1.6	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00079	< 0.0010	0.0030	
	17-Sep-2024	Grab	0.051	< 0.00060	0.00033	0.043	< 0.0010	< 0.020	0.000030	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00087	0.0015	< 0.10	0.00032	1.4	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00071	< 0.0010	0.0040	
AEMP-DS-09 (End of Facility)	17-Mar-2024	Grab	0.0071	< 0.00060	0.00035	0.066	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.000015 [#3]	0.0012	0.0012	< 0.10	0.00039	2.5	< 0.00010	0.36	< 0.00020	< 0.0010	< 0.0010	0.00093	< 0.0010	0.0036	
	19-Jul-2024	Grab	0.040	< 0.00060	0.00028	0.051	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	0.030	< 0.0040	< 0.0000019	0.00098	0.00097	< 0.10	0.00043	1.6	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00086	< 0.0010	< 0.0030	
	15-Aug-2024	Grab	0.054	< 0.00060	0.00031	0.052	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	0.00025	< 0.020	0.0072	< 0.0000019	0.0012	0.0013	< 0.10	0.00046	1.7	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00097	< 0.0010	< 0.0030	
	17-Sep-2024	Grab	0.053	< 0.00060	0.00027	0.051	< 0.0010	< 0.020	0.000026	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0020	< 0.10	0.00045	1.6	< 0.00010	0.27	< 0.00020	< 0.0010	< 0.0010	0.00082	< 0.0010	0.0046	
UPSTREAM																															
AEMP-US-01 (Midway)	12-Mar-2023	Grab	0.018	< 0.00060	0.00021	0.034	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00057	< 0.00050	< 0.10	< 0.00020	1.3	< 0.00010	0.18	< 0.00020	< 0.0010	< 0.0010	0.00037	< 0.0010	< 0.0030	
	25-Jul-2023	Grab	0.024	< 0.00060	0.00032	0.056	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00082	0.0013	< 0.10	0.00024	1.7	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00063	< 0.0010	< 0.0030	
	19-Aug-2023	Grab	0.0087	< 0.00060	< 0.00020	0.015	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00030	< 0.00050	< 0.10	< 0.00020	< 0.50	< 0.00010	0.065	< 0.00020	< 0.0010	< 0.0010	0.00023	< 0.0010	< 0.0030	
	26-Sep-2023	Grab	0.010	< 0.00060	< 0.00020	0.034	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00055	0.00068	< 0.10	< 0.00020	1.1	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.00044	< 0.0010	< 0.0030	
	16-Mar-2024	Grab	< 0.0030	< 0.00060	0.00028	0.035	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	---	0.00052	0.00061	< 0.10	< 0.00020	1.5	< 0.00010	0.18	< 0.00020	< 0.0010	< 0.0010	0.00043	< 0.0010	< 0.0030	
	19-Jul-2024	Grab	0.051	< 0.00060	0.00033	0.043	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.038	< 0.0040	< 0.0000019	0.00072	0.00083	< 0.10	0.00034	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00062	< 0.0010	< 0.0030	
	15-Aug-2024	Grab	0.025	< 0.00060	0.00040	0.044	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00090	0.00083	< 0.10	0.00032	1.3	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00066	< 0.0010	< 0.0030	
	17-Sep-2024	Grab	0.019	< 0.00060	0.00024	0.038	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	0.024	< 0.0040	< 0.0000019	0.00075	0.00084	< 0.10	< 0.00020	1.3	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00047	< 0.0010	0.0043	
AEMP-US-02 (10 mile)	23-Jun-2018	Grab	0.045	< 0.00060	0.00025	0.044	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00094	0.0012	< 0.10	0.00029	1.5	< 0.00010	0.16	< 0.00020	< 0.0010	< 0.0010	0.00062	< 0.0010	< 0.0030	
	14-Aug-2018	Grab	0.074	< 0.00060	< 0.00020	0.047	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00097	0.0017	< 0.10	0.00036	1.6	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00076	< 0.0010	< 0.0030	
(Duplicate)	14-Aug-2018	Grab	**0.24** [#1]	< 0.00060	0.00050	0.054	< 0.0010	< 0.020	0.000065	< 0.0010	0.00050	0.0019	0.28	0.00034	< 0.020	0.018	0.0000021	0.00090	0.0024	< 0.10	0.00037	2.0	< 0.00010	0.22	< 0.00020	< 0.0010	0.0027	0.00077	< 0.0010	0.0079	
	18-Oct-2018	Grab	0.0061	< 0.00060	0.00030	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.00081	< 0.060	< 0.00020	< 0.020	0.0099	< 0.0000020	0.00077	0.00079	< 0.10	< 0.00020	1.4	< 0.00010	0.22	< 0.00020	< 0.0010	< 0.0010	0.00050	< 0.0010	< 0.0030	
	10-Jun-2019	Grab	0.017	< 0.00060	0.00021	0.040	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0022	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00090	0.0013	< 0.10	0.00026	1.6	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00065	< 0.0010	< 0.0030	
	26-Aug-2019	Grab	0.039	< 0.00060	< 0.00020	0.047	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.00077	0.0012	< 0.10	0.00038	1.8	< 0.00010	0.25	< 0.00020	0.0019	< 0.0010	0.00078	< 0.0010	< 0.0030	
	01-Oct-2019	Grab	0.026	< 0.00060	0.00028	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0014	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000020	0.0011	0.0018	< 0.10	0.00048	1.8	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00082	< 0.0010	< 0.0030	
	12-Jun-2020	Grab	0.017	< 0.00060	0.00023	0.040	< 0.0010	< 0.020	0.000021	< 0.0010	< 0.00030	0.0019	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00089	0.0015	< 0.10	0.00042	1.7	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00069	< 0.0010	< 0.0030	
	28-Jul-2020	Grab	0.029	< 0.00060	0.00031	0.042	< 0.0010	< 0.020	0.000026	< 0.0010	< 0.00030	0.0015	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0012	0.0016	< 0.10	0.00054	1.7	< 0.00010	0.17	< 0.00020	< 0.0010	< 0.0010	0.00086	< 0.0010	< 0.0030	
	22-Sep-2020	Grab	0.066	< 0.00060	0.00044	0.048	< 0.0010	< 0.020	0.000020	< 0.0010	< 0.00030	0.0015	0.17	< 0.00020	< 0.020	0.0077	< 0.0000019	0.00089	0.0021	< 0.10	0.00039	2.4	< 0.00010	0.19	< 0.00020	< 0.0010	0.0015	0.00071	< 0.0010	< 0.0030	
	07-Jun-2021	Grab	0.024	< 0.00060	0.00054	0.041	< 0.0010	< 0.020	< 0.000020	0.0012	< 0.00030	0.0014	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00081	0.0012	< 0.10	0.00035	1.8	< 0.00010	0.15	< 0.00020	< 0.0010	0.0027	0.00055	< 0.0010	< 0.0030	
	19-Aug-2021	Grab	0.029	< 0.00060	0.00042	0.049	< 0.0010	< 0.020	0.000029	< 0.0010	< 0.00030	**0.0042** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00090	0.0018	< 0.10	< 0.00020	1.8	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00069	< 0.0010	0.0042	
	18-Sep-2021	Grab	0.026	< 0.00060	0.00041	0.043	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.0046** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00092	0.0017	< 0.10	0.00025	1.7	< 0.00010	0.19	< 0.00020	< 0.0010	< 0.0010	0.00071	< 0.0010	< 0.0030	
	10-Aug-2022	Grab	0.022	< 0.00060	0.00029	0.051	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.0028** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00082	0.0011	< 0.10	0.00026	1.8	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00068	< 0.0010	0.0031	
	12-Mar-2023	Grab	< 0.0030	< 0.00060	0.00020	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.0037** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00053	< 0.00050	< 0.10	< 0.00020	1.3	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00043	< 0.0010	0.0040	
	25-Jul-2023	Grab	0.035	< 0.00060	0.00032	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0023	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0011	< 0.10	0.00034	1.6	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00078	< 0.0010	< 0.0030	
	19-Aug-2023	Grab	0.018	< 0.00060	0.00040	0.050	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0017	< 0.060	< 0.00020	< 0.020	0.0075	< 0.0000019	0.0011	0.00096	< 0.10	0.00038	1.4	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00073	< 0.0010	< 0.0030	
	24-Sep-2023	Grab	0.017	< 0.00060	0.00027	0.055	< 0.0010	0.021	< 0.000020	< 0.0010	< 0.00030	**0.0026** [#1]	0.091	< 0.00020	< 0.020	0.018	0.0000026	0.0012	0.0016	< 0.10	0.00028	1.3	< 0.00010	0.28	< 0.00020	< 0.0010	< 0.0010	0.00079	< 0.0010	< 0.0030	
	17-Mar-2024	Grab	0.0030	< 0.00060	< 0.00020	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.000014 [#3]	0.00054	0.00061	< 0.10	< 0.00020	1.9	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00045	< 0.0010	0.0035	
	19-Jul-2024	Grab	0.033	< 0.00060	0.00035	0.052	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0012	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0012	0.00099	< 0.10	0.00038	1.5	< 0.00010	0.24	< 0.00020	< 0.0010	< 0.0010	0.00078	< 0.0010	< 0.0030	
	15-Aug-2024	Grab	0.051	< 0.00060	0.00031	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	**0.0080** [#1]	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00099	0.0012	< 0.10	0.00038	1.6	< 0.00010	0.24	< 0.00020	< 0.0010	0.0011	0.00081	< 0.0010	< 0.0030	

Table 5

Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)	Sample Comment
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00017**	**0.0089**	**---**	**0.00257**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1028**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.019**	
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00037**	**0.0089**	**---**	**0.004**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1500**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.039**	
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	**---**	**5**	**0.007**	**0.05**	**---**	**2**	**---**	**0.005**	**---**	**0.12**	**0.001**	**---**	**---**	**---**	**0.05**	**---**	**---**	**7**	**---**	**---**	**---**	**0.02**	**---**	**---**	
Federal Environmental Quality Guidelines - Mackenzie River [#4]			**0.76**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0011**	**---**	**0.33**	**0.0059**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
Federal Environmental Quality Guidelines - Bosworth Creek [#4]			**0.72**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0017**	**---**	**0.29**	**0.0075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
	17-Sep-2024	Grab	0.032	< 0.00060	0.00029	0.036	< 0.0010	< 0.020	0.000021	< 0.0010	< 0.00030	< 0.0010	< 0.060	0.00052	< 0.020	< 0.0040	< 0.0000019	0.0011	0.0012	< 0.10	0.00025	1.2	< 0.00010	0.20	< 0.00020	< 0.0010	< 0.0010	0.00068	< 0.0010	< 0.0030	
AEMP-US-03 (Norman Wells Upstream)	09-Mar-2023	Grab	0.012	< 0.00060	< 0.00020	0.036	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00051	0.00074	< 0.10	< 0.00020	1.4	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00041	< 0.0010	< 0.0030	
	17-Mar-2024	Grab	< 0.0030	< 0.00060	< 0.00020	0.043	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.000021 [#3]	0.00055	0.00069	< 0.10	< 0.00020	1.9	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00048	< 0.0010	< 0.0030	
	19-Jul-2024	Grab	0.038	< 0.00060	0.00032	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	0.034	< 0.0040	< 0.0000019	0.00084	0.00094	< 0.10	0.00037	1.4	< 0.00010	0.21	< 0.00020	< 0.0010	< 0.0010	0.00074	< 0.0010	< 0.0030	
	16-Aug-2024	Grab	0.027	< 0.00060	0.00042	0.052	< 0.0010	< 0.020	0.000041	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	< 0.020	0.021	< 0.0000019	0.00098	0.0011	< 0.10	0.00038	1.5	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00082	< 0.0010	< 0.0030	
	12-Sep-2024	Grab	0.039	< 0.00060	0.00024	0.042	< 0.0010	< 0.020	0.000021	< 0.0010	< 0.00030	0.0014	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.00096	0.0011	< 0.10	0.00026	1.4	< 0.00010	0.23	< 0.00020	< 0.0010	< 0.0010	0.00065	< 0.0010	< 0.0030	
BOSWORTH CREEK																															
Bosworth Upstream Data UCL			**0.138**	**---**	**0.00042**	**0.089**	**---**	**---**	**0.0001**	**0.005**	**---**	**0.00102**	**0.297**	**---**	**---**	**---**	**---**	**0.0023**	**0.0013**	**---**	**0.00039**	**---**	**---**	**---**	**---**	**---**	**---**	**0.0015**	**---**	**0.015**	
Bosworth Upstream Data LCL			**<0.003**	**---**	**<0.00020**	**0.066**	**---**	**---**	**N/C**	**N/C**	**---**	**0.00014**	**<0.060**	**---**	**---**	**---**	**---**	**0.0014**	**<0.0005**	**---**	**<0.0002**	**---**	**---**	**---**	**---**	**---**	**---**	**0.0009**	**---**	**N/C**	
DOWNSTREAM																															
AEMP-DS-01 (Lower Bosworth Creek)	18-Aug-2017	Grab	< 0.0030	< 0.00060	< 0.00020	0.087	< 0.0010	0.027	< 0.000020	< 0.0010	< 0.00030	0.00086	< 0.060	< 0.00020	< 0.020	0.0077	< 0.0000020	0.0019	0.00088	< 0.10	< 0.00020	2.1	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.00099	< 0.0010	< 0.0030	
	16-Sep-2017	Grab	0.0054	< 0.00060	0.00020	0.077	< 0.0010	0.026	< 0.000020	< 0.0010	< 0.00030	0.00042	< 0.060	< 0.00020	< 0.020	0.0081	0.0000023	0.0017	0.00069	< 0.10	< 0.00020	2.0	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
(Duplicate)	16-Sep-2017	Grab	0.0051	< 0.00060	< 0.00020	0.076	< 0.0010	0.026	< 0.000020	< 0.0010	< 0.00030	0.00037	< 0.060	< 0.00020	< 0.020	0.0078	0.0000021	0.0017	0.00074	< 0.10	< 0.00020	2.0	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030	
	16-Oct-2017	Grab	0.0033	< 0.00060	0.00021	0.072	< 0.0010	0.024	< 0.000020	< 0.0010	< 0.00030	0.00042	< 0.060	< 0.00020	< 0.020	0.0091	< 0.0000020	0.0018	0.00077	< 0.10	< 0.00020	2.1	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	23-Jun-2018	Grab	< 0.0030	< 0.00060	0.00023	0.085	< 0.0010	0.028	< 0.000020	< 0.0010	< 0.00030	0.00045	< 0.060	< 0.00020	< 0.020	0.0058	< 0.0000020	0.0019	0.00074	< 0.10	< 0.00020	2.0	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030	
	12-Aug-2018	Grab	< 0.0030	< 0.00060	< 0.00020	0.078	< 0.0010	0.029	< 0.000020	< 0.0010	< 0.00030	0.00062	< 0.060	< 0.00020	< 0.020	0.0079	0.0000020	0.0017	0.00078	< 0.10	0.00024	2.1	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	16-Oct-2018	Grab	0.0060	< 0.00060	< 0.00020	0.068	< 0.0010	0.027	< 0.000020	< 0.0010	< 0.00030	0.00092	< 0.060	< 0.00020	< 0.020	0.0046	< 0.0000020	0.0019	< 0.00050	< 0.10	< 0.00020	2.0	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	03-Jun-2019	Grab	0.0033	< 0.00060	0.00023	0.072	< 0.0010	0.021	< 0.000020	< 0.0010	< 0.00030	0.00086	< 0.060	< 0.00020	< 0.020	0.0050	< 0.0000020	0.0017	0.00060	< 0.10	< 0.00020	1.6	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.00098	< 0.0010	< 0.0030	
(Duplicate)	03-Jun-2019	Grab	0.0035	< 0.00060	0.00020	0.071	< 0.0010	0.021	< 0.000020	< 0.0010	< 0.00030	0.00047	< 0.060	< 0.00020	< 0.020	0.0049	< 0.0000020	0.0016	0.00058	< 0.10	< 0.00020	1.6	< 0.00010	1.1	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	28-Aug-2019	Grab	< 0.0030	< 0.00060	< 0.00020	0.076	< 0.0010	0.024	< 0.000020	< 0.0010	< 0.00030	**0.0014**	< 0.060	< 0.00020	< 0.020	0.0069	< 0.0000020	0.0016	< 0.00050	< 0.10	< 0.00020	1.9	< 0.00010	1.3	< 0.00020	0.0047	< 0.0010	0.0011	< 0.0010	< 0.0030	
	03-Oct-2019	Grab	< 0.0030	< 0.00060	< 0.00020	0.076	< 0.0010	0.029	< 0.000020	< 0.0010	< 0.00030	0.00059	< 0.060	< 0.00020	< 0.020	0.0069	< 0.0000020	0.0018	0.00062	< 0.10	0.00020	2.1	< 0.00010	1.4	< 0.00020	0.0020	< 0.0010	0.0012	< 0.0010	0.0055	
	10-Jun-2020	Grab	0.0039	< 0.00060	0.00030	0.080	< 0.0010	0.032	< 0.000020	< 0.0010	< 0.00030	0.00061	< 0.060	< 0.00020	< 0.020	0.0043	< 0.0000019	0.0018	**0.0026**	< 0.10	0.00021	1.9	< 0.00010	1.2	< 0.00020	< 0.0010	< 0.0010	0.0012	0.0012	< 0.0030	
	24-Jul-2020	Grab	0.0037	< 0.00060	< 0.00020	0.082	< 0.0010	0.034	< 0.000020	< 0.0010	< 0.00030	0.00098	0.062	0.00041	< 0.020	0.0075	< 0.0000019	0.0019	0.00087	< 0.10	0.00026	1.9	< 0.00010	1.4	< 0.00020	0.0018	< 0.0010	**0.0015**	< 0.0010	< 0.0030	
	18-Sep-2020	Grab	0.0042	< 0.00060	0.00021	0.075	< 0.0010	0.029	< 0.000020	< 0.0010	< 0.00030	0.00064	< 0.060	< 0.00020	< 0.020	0.0062	< 0.0000019	0.0018	< 0.00050	< 0.10	< 0.00020	1.9	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030	
	06-Jun-2021	Grab	< 0.0030	< 0.00060	**0.00045**	0.074	< 0.0010	0.023	< 0.000020	0.0015	< 0.00030	0.00069	< 0.060	< 0.00020	< 0.020	0.0063	< 0.0000019	**0.0014**	0.0011	< 0.10	0.00021	1.9	< 0.00010	1.3	< 0.00020	< 0.0010	< 0.0010	0.00092	< 0.0010	< 0.0030	
	18-Aug-2021	Grab	0.0041	< 0.00060	0.00022	0.079	< 0.0010	0.037	< 0.000020	< 0.0010	< 0.00030	**0.0032**	< 0.060	< 0.00020	< 0.020	0.0058	---	0.0018	0.00072	< 0.10	< 0.00020	2.0	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	0.0057	
	22-Aug-2021	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	< 0.0000019	---	---	---	---	---	---	---	---	---	---	---	---	---	
	19-Sep-2021	Grab	< 0.0030	< 0.00060	< 0.00020	0.079	< 0.0010	0.048	< 0.000020	< 0.0010	< 0.00030	**0.0028**	< 0.060	< 0.00020	< 0.020	0.0072	< 0.0000019	0.0017	< 0.00050	< 0.10	< 0.00020	2.0	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	0.0036	
	11-Jun-2022	Grab	0.018	< 0.00060	0.00021	0.073	< 0.0010	0.027	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0076	< 0.0000019	0.0015	**0.0015**	< 0.10	< 0.00020	1.7	< 0.00010	1.2	< 0.00020	0.0021	< 0.0010	**0.00090**	< 0.0010	< 0.0030	
	06-Aug-2022	Grab	< 0.0030	< 0.00060	0.00035	0.082	< 0.0010	0.036	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0061	< 0.0000019	0.0018	0.00053	< 0.10	< 0.00020	2.2	< 0.00010	1.4	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030	
	26-Sep-2022	Grab	< 0.0030	< 0.00060	< 0.00020	0.073	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0055	< 0.0000019	**0.0035**	0.00052	< 0.10	< 0.00020	1.8	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030	
	26-Jul-2023	Grab	0.0057	< 0.00060	0.00025	0.087	< 0.0010	0.044	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0063	< 0.0000019	0.0018	0.00068	< 0.10	< 0.00020	2.6	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.00099	< 0.0010	< 0.0030	
	18-Aug-2023	Grab	0.0038	< 0.00060	0.00023	0.081	< 0.0010	0.039	< 0.000020	< 0.0010	< 0.00030	**0.0011**	< 0.060	< 0.00020	< 0.020	0.0073	< 0.0000019	0.0018	< 0.00050	< 0.10	0.00020	2.0	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
(Duplicate)	18-Aug-2023	Grab	0.0037	< 0.00060	0.00025	0.081	< 0.0010	0.034	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0075	< 0.0000019	0.0017	< 0.00050	< 0.10	0.00025	2.0	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	25-Sep-2023	Grab	0.0054	< 0.00060	< 0.00020	**< 0.010**	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	**< 0.00020**	< 0.00050	< 0.10	< 0.00020	< 0.50	< 0.00010	< 0.020	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030	
(Duplicate)	25-Sep-2023	Grab	0.0066	0.00081	< 0.00020	**< 0.050**	< 0.0010	< 0.10	< 0.000020	< 0.0010	< 0.00030	< 0.0010	**< 0.30** [#4]	< 0.00020	< 0.10	< 0.020	< 0.0000019	**< 0.00020**	< 0.00050	< 0.50	< 0.00020	< 2.5	< 0.00010	< 0.10	< 0.00020	< 0.0010	< 0.0010	< 0.00010	< 0.0010	< 0.0030	
	18-Jul-2024	Grab	< 0.0030	< 0.00060	0.00027	0.090	< 0.0010	0.038	< 0.000020	< 0.0010	< 0.00030	**0.0012**	< 0.060	< 0.00020	0.037	< 0.0040	< 0.0000019	0.0017	0.00062	< 0.10	< 0.00020	2.4	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	16-Aug-2024	Grab	< 0.0030	< 0.00060	0.00020	0.085	< 0.0010	0.038	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.027	0.0072	< 0.0000019	0.0018	0.00059	< 0.10	< 0.00020	2.2	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030	
	13-Sep-2024	Grab	0.0046	< 0.00060	0.00025	0.083	< 0.0010	0.042	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.036	0.0069	< 0.0000019	0.0017	< 0.00050	< 0.10	0.00031	2.0	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
(Duplicate)	13-Sep-2024	Grab	0.0039	< 0.00060	< 0.00020	0.082	< 0.0010	0.034	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0069	< 0.0000019	0.0017	< 0.00050	< 0.10	0.00032	2.0	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
UPSTREAM																															
AEMP-US-04 (Upper Bosworth Creek)	26-Jul-2023	Grab	0.0051	< 0.00060	0.00023	0.082	< 0.0010	0.038	< 0.000020	< 0.0010	< 0.00030	0.0014	< 0.060	< 0.00020	< 0.020	< 0.0040	0.0000032	0.0018	0.00092	< 0.10	< 0.00020	2.4	< 0.00010	1.5	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030	
	18-Aug-2023	Grab	0.0053	< 0.00060	< 0.00020	---	< 0.0010	---	< 0.000020	< 0.0010	< 0.00030	0.0016	< 0.060	< 0.00020	---	0.0062	< 0.0000019	0.0017	0.00070	---	< 0.00020	---	< 0.00010	---	< 0.00020	< 0.0010	< 0.0010	0.0010	< 0.0010	< 0.0030	
	24-Sep-2023	Grab	0.0077	< 0.00060	< 0.00020	0.083	< 0.0010	0.035	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0052	< 0.0000019	0.0018	0.00070	< 0.10	< 0.00020	2.6	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	18-Jul-2024	Grab	0.0081	< 0.00060	0.00020	0.083	< 0.0010	0.034	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	< 0.0040	< 0.0000019	0.0017	0.00061	< 0.10	< 0.00020	2.3	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	16-Aug-2024	Grab	0.0032	< 0.00060	< 0.00020	0.086	< 0.0010	0.034	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0058	< 0.0000019	0.0017	0.00051	< 0.10	< 0.00020	2.2	< 0.00010	1.7	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	13-Sep-2024	Grab	< 0.0030	< 0.00060	< 0.00020	0.080	< 0.0010	0.039	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0057	< 0.0000019	0.0017	< 0.00050	< 0.10	< 0.00020	2.2	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
AEMP-US-05	19-Jul-2024	Grab	< 0.0030	< 0.00060	0.00023	0.082	< 0.0010	0.031	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.035	0.0045	< 0.0000019	0.0016	0.00063	< 0.10	< 0.00020	2.2	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
	16-Aug-2024	Grab	0.0030	< 0.00060	< 0.00020	0.083	< 0.0010	0.034	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.024	0.0056	< 0.0000019	0.0018	< 0.00050	< 0.10	0.00023	2.2	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0012	< 0.0010	< 0.0030	
	12-Sep-2024	Grab	< 0.0030	< 0.00060	< 0.00020	0.079	< 0.0010	0.033	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0053	< 0.0000019	0.0020	< 0.00050	< 0.10	< 0.00020	2.2	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
Relative Percent Difference (RPD) Report																															
AEMP-DS-02 (Marine Dock)	20-Jul-2024	Grab	0.041	< 0.00060	0.00031	0.046	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	0.0011	< 0.060	< 0.00020	0.029	< 0.0040	< 0.0000019	0.00080	0.00082	< 0.10	0.00030	1.5	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00075	< 0.0010	< 0.0030	
(Duplicate)	20-Jul-2024	Grab	0.040	< 0.00060	0.00034	0.048	< 0.0010	< 0.020	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.031	< 0.0040	< 0.0000019	0.00090	0.00095	< 0.10	0.00034	1.5	< 0.00010	0.26	< 0.00020	< 0.0010	< 0.0010	0.00074	< 0.0010	< 0.0030	
RPD(%)			**2.5%**	**---**	**9.2%**	**4.3%**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**6.7%**	**---**	**---**	**11.8%**	**14.7%**	**---**	**12.5%**	**0.0%**	**---**	**0.0%**	**---**	**---**	**---**	**1.3%**	**---**	**---**	

Table 5

Surface Water Analytical Results: Dissolved Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (Total) (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Lithium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Phosphorus (mg/L)	Selenium (mg/L)	Silicon (mg/L)	Silver (mg/L)	Strontium (mg/L)	Thallium (mg/L)	Tin (mg/L)	Titanium (mg/L)	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)	Sample Comment
CCME CEQG Freshwater Aquatic Life - Mackenzie River [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00017**	**0.0089**	**---**	**0.00257**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1028**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.019**	
CCME CEQG Freshwater Aquatic Life - Bosworth Creek [#1]			**0.1**	**---**	**0.005**	**---**	**---**	**1.5**	**0.00037**	**0.0089**	**---**	**0.004**	**0.3**	**0.0036**	**---**	**---**	**0.000026**	**0.073**	**0.1500**	**---**	**0.001**	**---**	**0.00025**	**---**	**0.0008**	**---**	**---**	**0.015**	**---**	**0.039**	
Canadian Drinking Water Quality Guidelines 2024 - MAC [#2]			**2.9**	**0.006**	**0.01**	**2**	**---**	**5**	**0.007**	**0.05**	**---**	**2**	**---**	**0.005**	**---**	**0.12**	**0.001**	**---**	**---**	**---**	**0.05**	**---**	**---**	**7**	**---**	**---**	**---**	**0.02**	**---**	**---**	
Federal Environmental Quality Guidelines - Mackenzie River [#4]			**0.76**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0011**	**---**	**0.33**	**0.0059**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
Federal Environmental Quality Guidelines - Bosworth Creek [#4]			**0.72**	**---**	**---**	**---**	**---**	**---**	**---**	**0.005**	**0.0017**	**---**	**0.29**	**0.0075**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5**	**---**	**---**	**---**	**---**	**0.12**	**---**	
AEMP-DS-02 (Marine Dock)	16-Aug-2024	Grab	0.020	< 0.00060	0.00037	0.064	< 0.0010	0.021	< 0.000020	< 0.0010	< 0.00030	0.0013	< 0.060	< 0.00020	< 0.020	0.040	< 0.0000019	0.0015	0.00099	< 0.10	0.00033	1.8	< 0.00010	0.61	< 0.00020	< 0.0010	< 0.0010	0.00086	< 0.0010	< 0.0030	
(Duplicate)	16-Aug-2024	Grab	0.021	< 0.00060	0.00043	0.064	< 0.0010	0.021	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.039	< 0.0000019	0.0012	0.00090	< 0.10	0.00032	1.7	< 0.00010	0.60	< 0.00020	< 0.0010	< 0.0010	0.00085	< 0.0010	< 0.0030	
RPD(%)			**4.9%**	**---**	**15.0%**	**0.0%**	**---**	**0.0%**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**2.5%**	**---**	**22.2%**	**9.5%**	**---**	**3.1%**	**5.7%**	**---**	**1.7%**	**---**	**---**	**---**	**1.2%**	**---**	**---**	
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	Grab	0.0046	< 0.00060	0.00025	0.083	< 0.0010	0.042	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	0.036	0.0069	< 0.0000019	0.0017	< 0.00050	< 0.10	0.00031	2.0	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
(Duplicate)	13-Sep-2024	Grab	0.0039	< 0.00060	< 0.00020	0.082	< 0.0010	0.034	< 0.000020	< 0.0010	< 0.00030	< 0.0010	< 0.060	< 0.00020	< 0.020	0.0069	< 0.0000019	0.0017	< 0.00050	< 0.10	0.00032	2.0	< 0.00010	1.6	< 0.00020	< 0.0010	< 0.0010	0.0011	< 0.0010	< 0.0030	
RPD(%)			**16.5%**	**---**	**---**	**1.2%**	**---**	**21.1%**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**0.0%**	**---**	**0.0%**	**---**	**---**	**3.2%**	**0.0%**	**---**	**0.0%**	**---**	**---**	**---**	**0.0%**	**---**	**---**	

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1] denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life.
   http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)

   Aluminum:
   Standard varies with pH.
   pH < 6.5 = 0.005 mg/L
   pH >= 6.5 = 0.1 mg/L

   Boron:
   Guideline based on long term exposure

   Cadmium:
   Guideline based on long term exposure

   Chromium (Total):
   Limit is for Chromium(III).

   Copper:
   Guideline is hardness dependent. Presented guideline set to lower limit.

   Lead:
   Guideline is hardness dependent. Presented guideline set to lower limit.

   Mercury:
   Guideline for Inorganic mercury

   Nickel:
   Guideline is hardness dependent. Presented guideline set to lower limit.

   Silver:
   Guideline based on long term exposure

   Uranium:
   Guideline based on long term exposure

7. Superscript [#2] denotes values exceeding
   (Health Canada. 2024. Guidelines for Canadian Drinking Water Quality. Summary Table. Maximum Acceptable Concentration.
   Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.
   August 2024.)

   Chromium (Total):
   MAC established for total chromium to protect from Chromium (VI).

8. Superscript [#3] - Mercury RDL raised due to background interference.

12 Superscript [#4] denotes values exceeding
(ECCC. 2024. Federal Environmental Quality Guidelines Summary Table. Environment and Climate Change Canada, Ottawa, Ontario, November 2024.)

Chromium:
Guideline is based on chromium(VI)

Iron:
Guideline is DOC and pH dependent and presented guidelines are set based on 25th percentile of pH and DOC at upstream sites for each watercourse.

Lead:
Guideline is DOC and hardness dependent and presented guidelines are set based on 25th percentile of hardness and DOC at upstream sites for each watercourse.

Above UCL
Equal to UCL
Below LCL
Equal to LCL

Table 6

Surface Water Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Polycyclic aromatic hydrocarbons (PAHs)|Carcinogenic								Polycyclic aromatic hydrocarbons (PAHs)|Non-Carcinogenic														
			Benzo(a)Anthracene (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(a)Pyrene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Biphenyl (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Retene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.000018**	---	---	---	**0.000015**	---	---	---	**0.0058**	---	**0.0044**	**0.000012**	---	---	---	**0.00004**	**0.003**	---	**0.0011**	---	**0.0004**	**0.000025**	---	**0.0034**
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	**0.00004**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Federal Environmental Quality Guidelines [#3]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.15**
NW AEMP V5																										
MACKENZIE RIVER																										
DOWNSTREAM																										
AEMP-DS-02 (Marine Dock)	10-Jun-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	24-Jul-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Sep-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	06-Jun-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Aug-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	12-Jun-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	06-Aug-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	25-Sep-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	09-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	25-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Aug-2023	**SPMD**	0.000000091	0.000000054	0.000000024	0.000000052	N/D	0.000001328	N/D	N/D	0.000000692	0.000000189	N/A	0.000000537	N/A	0.000000189	0.000005813	0.000001393	0.000002465	0.000006362	0.000007659	0.000000251	0.000017421	0.000001906	N/A	N/A
	24-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	24-Sep-2023	**SPMD**	0.000000159	0.000000122	0.000000025	0.000000084	0.000000027	0.000003253	0.000000014	N/D	0.000001129	0.000000157	N/A	0.000000301	N/A	0.000000388	0.000005191	0.000001317	0.000005038	0.000020804	0.000012121	0.000000381	0.000035883	0.000002869	N/A	N/A
(Duplicate)	24-Sep-2023	**SPMD**	N/D	N/D	N/D	0.000000006	N/D	0.000000162	N/D	N/D	0.000000255	0.000000074	N/A	0.000000092	N/A	0.000000020	0.000002470	0.000000205	0.000000768	0.000002748	0.000003976	0.000000027	0.000004823	0.000000267	N/A	N/A
	18-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	20-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	20-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	13-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	20-Jul-2024	**SPMD**	0.00000005	0.00000004	N/D	0.00000004	N/D	0.00000094	N/D	N/D	0.00000072	N/D	N/A	N/D	N/A	0.00000015	0.00000184	0.00000043	0.00000201	0.00001013	0.00000798	0.00000023	0.00000023	0.00000113	N/A	N/A
(Duplicate)	20-Jul-2024	**SPMD**	0.00000005	0.00000003	N/D	0.00000003	N/D	0.00000058	N/D	N/D	0.00000031	N/D	N/A	N/D	N/A	0.00000010	0.00000118	0.00000023	0.00000114	0.00000664	0.00000398	0.00000011	0.00000914	0.00000069	N/A	N/A
	16-Aug-2024	**SPMD**	0.00000015	0.00000012	N/D	0.00000011	0.00000003	0.00000238	N/D	N/D	0.00000044	0.00000012	N/A	0.00000013	N/A	0.00000042	0.00000306	0.00000081	0.00000214	0.00000469	0.00000394	0.00000032	0.00001489	0.00000196	N/A	N/A
(Duplicate)	16-Aug-2024	**SPMD**	0.00000004	0.00000004	N/D	0.00000003	N/D	0.00000077	N/D	N/D	0.00000027	0.00000007	N/A	0.00000008	N/A	0.00000013	0.00000226	0.00000028	0.00000131	0.00000279	0.00000194	0.00000009	0.00000817	0.00000069	N/A	N/A
	13-Sep-2024	**SPMD**	0.00000034	0.00000023	N/D	0.00000018	0.00000004	0.00000325	0.00000003	N/D	0.00000089	0.00000011	N/A	0.00000058	N/A	0.00000084	0.00000435	0.00000113	0.00000640	0.00002469	0.00000927	0.00000038	0.00005267	0.00000297	N/A	N/A
AEMP-DS-03 (Island 3)	12-Jun-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	28-Jul-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	22-Sep-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	07-Jun-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
(Duplicate)	07-Jun-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	19-Aug-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Sep-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	14-Jun-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	06-Aug-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
(Duplicate)	06-Aug-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	25-Sep-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	09-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	25-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Aug-2023	**SPMD**	0.000000007	0.000000006	N/D	0.000000013	N/D	0.000000103	N/D	N/D	0.000000423	0.000000061	N/A	0.000000077	N/A	0.000000031	0.000001366	0.000000325	0.000000451	0.000000805	0.000003887	0.000000065	0.000002661	0.000000280	N/A	N/A
	25-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	25-Sep-2023	**SPMD**	0.000000013	0.000000018	N/D	0.000000026	N/D	0.000000181	N/D	0.000000007	0.000000458	0.000000183	N/A	0.000000143	N/A	0.000000059	0.000002288	0.000000831	0.000000947	0.000001208	0.000007505	0.000000178	0.000007906	0.000000573	N/A	N/A
	18-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	15-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	0.000000009	0.000000022	N/D	0.000000031	N/D	0.000000130	N/D	N/D	0.000000302	0.000000000	N/A	N/D	N/A	0.000000059	0.000000265	0.000000219	0.000000157	0.000000754	0.000003676	0.000000175	0.000001065	0.000000285	N/A	N/A
	15-Aug-2024	**SPMD**	0.000000026	0.000000043	N/D	0.000000050	0.000000013	0.000000278	N/D	0.000000015	0.000000254	0.000000114	N/A	0.000000042	N/A	0.000000125	0.000001059	0.000000492	0.000000396	0.000000800	0.000004100	0.000000199	0.000002455	0.000000540	N/A	N/A
AEMP-DS-04 (Refinery)	10-Jun-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	24-Jul-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
(Duplicate)	24-Jul-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Sep-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
(Duplicate)	18-Sep-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	0.0000089	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	0.000048	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	0.000069	< 0.000020	---	< 0.00020
	06-Jun-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Aug-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	12-Jun-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	06-Aug-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
(Duplicate)	06-Aug-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	24-Sep-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	0.00011	< 0.00010	< 0.000050	0.000068	< 0.000020	---	< 0.00020
(Duplicate)	24-Sep-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	0.000065	< 0.000020	---	< 0.00020
	11-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020

Table 6

Surface Water Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Polycyclic aromatic hydrocarbons (PAHs)|Carcinogenic								Polycyclic aromatic hydrocarbons (PAHs)|Non-Carcinogenic														
			Benzo(a)Anthracene (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(a)Pyrene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Biphenyl (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Retene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.000018**	---	---	---	**0.000015**	---	---	---	**0.0058**	---	**0.0044**	**0.000012**	---	---	---	**0.00004**	**0.003**	---	**0.0011**	---	**0.0004**	**0.000025**	---	**0.0034**
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	**0.00004**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Federal Environmental Quality Guidelines [#3]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.15**
	26-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	26-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Aug-2023	**SPMD**	0.000000047	0.000000033	N/D	0.000000044	N/D	0.000000660	N/D	N/D	0.000000517	0.000000146	N/A	0.000000241	N/A	0.000000131	0.000005323	0.000000817	0.000001722	0.000003941	0.000005659	0.000000174	0.000011132	0.000000891	N/A	N/A
	24-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	18-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	20-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	13-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	20-Jul-2024	**SPMD**	0.000000049	0.000000052	N/D	0.000000050	N/D	0.000000711	N/D	N/D	0.000000479	0.000000000	N/A	0.000000294	N/A	0.000000186	0.000001385	0.000000328	0.000001260	0.000008303	0.000005817	0.000000272	0.000007058	0.000000731	N/A	N/A
	18-Aug-2024	**SPMD**	0.000000047	0.000000033	N/D	0.000000044	N/D	0.000000660	N/D	N/D	0.000000517	0.000000146	N/A	0.000000241	N/A	0.000000131	0.000005323	0.000000817	0.000001722	0.000003941	0.000005659	0.000000174	0.000011132	0.000000891	N/A	N/A
	13-Sep-2024	**SPMD**	0.000000097	0.000000076	N/D	0.000000076	0.000000022	0.000001288	N/D	N/D	0.000000426	0.000000119	N/A	0.000000181	N/A	0.000000273	0.000001882	0.000001970	0.000001926	0.000004551	0.000004174	0.000000303	0.000015541	0.000001511	N/A	N/A
AEMP-DS-05 (Radar)	12-Jun-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	28-Jul-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	22-Sep-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	07-Jun-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	19-Aug-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
(Duplicate)	19-Aug-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Sep-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	11-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	25-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Aug-2023	**SPMD**	0.000000009	0.000000006	0.000000005	0.000000015	N/D	0.000000135	N/D	N/D	0.000000434	0.000000064	N/A	0.000000132	N/A	0.000000032	0.000002138	0.000000417	0.000000628	0.000000796	0.000003765	0.000000072	0.000003559	0.000000358	N/A	N/A
	26-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	26-Sep-2023	**SPMD**	0.000000037	0.000000037	N/D	0.000000043	N/D	0.000000497	N/D	0.000000012	0.000000399	0.000000206	N/A	0.000000228	N/A	0.000000104	0.000003064	0.000001170	0.000001359	0.000001352	0.000006684	0.000000256	0.000010742	0.000000752	N/A	N/A
	17-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	15-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	0.000000012	0.000000026	N/D	0.000000035	N/D	0.000000189	N/D	N/D	0.000000206	N/D	N/D	0.000000030	N/D	0.000000087	0.000000209	0.000000257	0.000000141	0.000000581	0.000002933	0.000000230	0.000001029	0.000000415	N/A	N/A
	17-Sep-2024	**SPMD**	0.000000047	0.000000035	N/D	0.000000036	0.000000022	0.000000489	N/D	N/D	0.000000453	0.000000112	N/D	0.000000168	N/D	0.000000119	0.000001492	0.000001284	0.000000739	0.000001180	0.000005224	0.000000162	0.000007090	0.000000851	N/A	N/A
AEMP-DS-06 (Fort Good Hope)	10-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
(Duplicate)	10-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	24-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	21-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	21-Aug-2023	**SPMD**	0.000000021	0.000000027	N/D	0.000000041	N/D	0.000000239	N/D	N/D	0.000000436	0.000000049	N/A	0.000000099	N/A	0.000000084	0.000001441	0.000000541	0.000000618	0.000000793	0.000003608	0.000000185	0.000003458	0.000000506	N/A	N/A
	03-Oct-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	15-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	14-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	14-Aug-2024	**SPMD**	0.000000015	0.000000027	N/D	0.000000033	0.000000006	0.000000191	N/D	0.000000010	0.000000184	0.000000045	N/A	0.000000017	N/A	0.000000078	0.000000484	0.000000238	0.000000208	0.000000809	0.000002830	0.000000135	0.000001353	0.000000342	N/A	N/A
AEMP-DS-07	17-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	14-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	14-Aug-2024	**SPMD**	0.000000014	0.000000021	N/D	0.000000022	N/D	0.000000182	N/D	0.000000005	0.000000187	0.000000090	N/A	0.000000036	N/A	0.000000065	0.000000581	0.000000282	0.000000286	0.000000526	0.000003444	0.000000115	0.000001833	0.000000366	N/A	N/A
	18-Sep-2024	**SPMD**	0.000000020	0.000000020	N/D	0.000000023	0.000000005	0.000000234	N/D	0.000000008	0.000000440	0.000000066	N/A	0.000000063	N/A	0.000000058	0.000000503	0.000000796	0.000000418	0.000000643	0.000003881	0.000000133	0.000004142	0.000000547	N/A	N/A

Table 6

Surface Water Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Polycyclic aromatic hydrocarbons (PAHs)|Carcinogenic								Polycyclic aromatic hydrocarbons (PAHs)|Non-Carcinogenic															
			Benzo(a)Anthracene (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(a)Pyrene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Biphenyl (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Retene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.000018**	---	---	---	**0.000015**	---	---	---	**0.0058**	---	**0.0044**	**0.000012**	---	---	---	**0.00004**	**0.003**	---	**0.0011**	---	**0.0004**	**0.000025**	---	**0.0034**
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	**0.00004**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Federal Environmental Quality Guidelines [#3]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.15**
AEMP-DS-08	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	15-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	N/D	0.000000030	N/D	0.000000040	N/D	0.000000226	N/D	N/D	0.000000241	0.000000000	N/A	N/D	N/A	0.000000104	0.000000234	0.000000292	0.000000137	0.000000576	0.000002824	0.000000263	0.000001075	0.000000455	N/A	N/A
	15-Aug-2024	**SPMD**	0.000000025	0.000000023	N/D	0.000000029	0.000000006	0.000000295	N/D	0.000000003	0.000000327	0.000000304	N/A	0.000000139	N/A	0.000000074	0.000004392	0.000000643	0.000001026	0.000001102	0.000011594	0.000000116	0.000005979	0.000000582	N/A	N/A
	17-Sep-2024	**SPMD**	0.000000033	0.000000022	N/D	0.000000019	N/D	0.000000415	N/D	0.000000006	0.000000296	0.000000112	N/A	0.000000154	N/A	0.000000061	0.000001559	0.000001339	0.000000650	0.000001109	0.000005169	0.000000124	0.000006458	0.000000826	N/A	N/A
AEMP-DS-09	17-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	15-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	1.26557E-08	2.59282E-08	N/D	5.51548E-08	N/D	1.6718E-07	N/D	N/D	2.04892E-07	N/D	N/A	3.37219E-08	N/A	8.33004E-08	2.2515E-07	2.32493E-07	1.50246E-07	3.29896E-06	9.34492E-06	2.15575E-07	9.26203E-07	3.50567E-07	N/A	N/A
	15-Aug-2024	**SPMD**	3.05393E-08	4.29554E-08	N/D	6.79708E-08	N/D	3.44667E-07	N/D	1.63553E-08	2.64758E-07	1.46353E-07	N/A	6.85029E-08	N/A	1.40316E-07	1.89668E-06	6.51539E-07	6.11587E-07	6.92043E-07	5.28513E-06	2.42369E-07	3.67898E-06	6.54677E-07	N/A	N/A
	17-Sep-2024	**SPMD**	0.000000020	0.000000015	N/D	0.000000020	N/D	0.000000191	N/D	0.000000007	0.000000233	0.000000074	N/A	0.000000099	N/A	0.000000045	0.000000798	0.000000836	0.000000417	0.000000663	0.000003785	0.000000106	0.000004149	0.000000602	N/A	N/A
UPSTREAM																										
AEMP-US-01 (Midway)	12-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	25-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Aug-2023	**SPMD**	0.000000026	0.000000019	0.000000011	0.000000038	0.000000009	0.000000335	N/D	0.000000012	0.000000850	0.000000186	N/A	0.000000317	N/A	0.000000093	0.000006429	0.000001084	0.000001624	0.000001895	0.000008678	0.000000201	0.000008225	0.000000802	N/A	N/A
	26-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	0.000057	< 0.00020
	16-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	15-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	0.000000018	0.000000028	N/D	0.000000035	N/D	0.000000204	N/D	N/D	0.000000709	0.000000045	N/A	0.000000041	N/A	0.000000080	0.000000357	0.000000432	0.000000367	0.000001085	0.000005820	0.000000291	0.000001867	0.000000440	N/A	N/A
	15-Aug-2024	**SPMD**	0.000000051	0.000000063	N/D	0.000000070	N/D	0.000000490	N/D	N/D	0.000000652	0.000000478	N/A	0.000000220	N/A	0.000000150	0.000010995	0.000001547	0.000002191	0.000002728	0.000017814	0.000000276	0.000012625	0.000001017	N/A	N/A
	17-Sep-2024	**SPMD**	0.000000050	0.000000033	N/D	0.000000035	N/D	0.000000507	N/D	0.000000011	0.000000272	0.000000165	N/A	0.000000198	N/A	0.000000082	0.000002776	0.000002739	0.000001009	0.000001371	0.000005902	0.000000304	0.000010624	0.000001224	N/A	N/A
AEMP-US-02 (10 mile)	12-Jun-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	28-Jul-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	22-Sep-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	07-Jun-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	19-Aug-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Sep-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	12-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	25-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	24-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	15-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	17-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	0.000000021	0.000000045	N/D	0.000000045	N/D	0.000000226	N/D	N/D	0.000000443	0.000000036	N/A	0.000000029	N/A	0.000000111	0.000000268	0.000000370	0.000000252	0.000000754	0.000003924	0.000000300	0.000001530	0.000000473	N/A	N/A
	15-Aug-2024	**SPMD**	0.000000022	0.000000030	N/D	0.000000036	N/D	0.000000254	N/D	0.000000004	0.000000398	0.000000259	N/A	0.000000098	N/A	0.000000090	0.000004706	0.000000575	0.000000875	0.000001273	0.000010298	0.000000133	0.000005058	0.000000531	N/A	N/A
	17-Sep-2024	**SPMD**	0.000000021	0.000000019	N/D	0.000000021	0.000000005	0.000000228	N/D	0.000000007	0.000000251	0.000000127	N/A	0.000000117	N/A	0.000000046	0.000001643	0.000001242	0.000000679	0.000001129	0.000004474	0.000000133	0.000006901	0.000000628	N/A	N/A
AEMP-US-03 (Norman Wells Upstream)	09-Mar-2023	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	17-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	0.00081	0.0011 #1	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	12-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	0.000000025	0.000000046	N/D	0.000000059	N/D	0.000000278	N/D	N/D	0.000000625	0.000000000	N/A	0.000000045	N/A	0.000000129	0.000000309	0.000000504	0.000000303	0.000000881	0.000004854	0.000000358	0.000001940	0.000000624	N/A	N/A
	16-Aug-2024	**SPMD**	0.000000027	0.000000037	N/D	0.000000039	0.000000008	0.000000302	N/D	0.000000008	0.000000427	0.000000360	N/A	0.000000120	N/A	0.000000105	0.000005253	0.000000843	0.000001265	0.000001852	0.000013777	0.000000138	0.000007771	0.000000637	N/A	N/A
	12-Sep-2024	**SPMD**	0.000000033	0.000000028	N/D	0.000000034	0.000000008	0.000000364	N/D	0.000000012	0.000000269	0.000000119	N/A	0.000000153	N/A	0.000000069	0.000001674	0.000001797	0.000000930	0.000000945	0.000003934	0.000000212	0.000008797	0.000000891	N/A	N/A
BOSWORTH CREEK																										
DOWNSTREAM																										
AEMP-DS-01 (Lower Bosworth Creek)	10-Jun-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	24-Jul-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Sep-2020	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	06-Jun-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	18-Aug-2021	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	11-Jun-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	06-Aug-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	26-Sep-2022	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	---	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	---	< 0.00020
	26-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	18-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020

Table 6

Surface Water Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Polycyclic aromatic hydrocarbons (PAHs)|Carcinogenic								Polycyclic aromatic hydrocarbons (PAHs)|Non-Carcinogenic														
			Benzo(a)Anthracene (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(a)Pyrene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Biphenyl (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Retene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			**0.000018**	---	---	---	**0.000015**	---	---	---	**0.0058**	---	**0.0044**	**0.000012**	---	---	---	**0.00004**	**0.003**	---	**0.0011**	---	**0.0004**	**0.000025**	---	**0.0034**
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	**0.00004**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Federal Environmental Quality Guidelines [#3]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.15**
	18-Aug-2023	**SPMD**	0.000000286	0.000000111	0.000000093	0.000000043	0.000000052	0.000001235	N/D	0.000000030	0.000001504	0.000000218	N/A	0.000000691	N/A	0.000000216	0.000014001	0.000005140	0.000003898	0.000004200	0.000010929	0.000000062	0.000018067	0.000003907	N/A	N/A
	25-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	25-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	25-Sep-2023	**SPMD**	0.000000391	0.000000151	0.000000141	0.000000134	0.000000065	0.000001226	N/D	0.000000056	0.000001434	N/D	N/A	0.000000406	N/A	0.000000242	0.000003587	0.000004794	0.000001929	0.000002326	0.000006567	0.000000075	0.000009896	0.000004222	N/A	N/A
	18-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	13-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	13-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Jul-2024	**SPMD**	0.000000137	0.000000093	N/D	N/D	0.000000000	0.000000739	N/D	N/D	0.000000970	0.000000066	N/A	0.000000154	N/A	0.000000177	0.000000450	0.000002296	0.000000951	0.000001481	0.000003791	0.000000000	0.000003937	0.000002207	N/A	N/A
	16-Aug-2024	**SPMD**	0.000000159	0.000000062	N/D	0.000000024	0.000000029	0.000000698	N/D	0.000000016	0.000001112	0.000000170	N/A	0.000000460	N/A	0.000000119	0.000011746	0.000003011	0.000002723	0.000003579	0.000010528	0.000000034	0.000012304	0.000002263	N/A	N/A
	13-Sep-2024	**SPMD**	0.000000546	0.000000182	N/D	N/D	0.000000079	0.000001164	0.000000009	0.000000022	0.000000022	0.000000042	N/A	0.000000284	N/A	0.000000220	0.000000587	0.000006536	0.000000755	0.000000956	0.000002969	0.000002969	0.000004543	0.000005382	N/A	N/A
(Duplicate)	13-Sep-2024	**SPMD**	0.000000180	0.000000057	N/D	0.000000010	0.000000025	0.000000398	N/D	0.000000006	0.000000399	0.000000020	N/A	0.000000119	N/A	0.000000070	0.000000353	0.000002561	0.000000334	0.000000589	0.000001759	0.000000015	0.000002181	0.000002153	N/A	N/A
UPSTREAM																										
AEMP-US-04 (Bosworth Creek)	26-Jul-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Aug-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Aug-2023	**SPMD**	0.000000070	0.000000066	N/D	0.000000040	N/D	0.000000711	N/D	N/D	0.000000720	0.000000183	N/A	0.000000296	N/A	0.000000151	0.000011303	0.000001124	0.000002638	0.000002728	0.000009931	0.000000030	0.000011811	0.000000765	N/A	N/A
	24-Sep-2023	PDB	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	24-Sep-2023	**SPMD**	0.000000123	0.000000068	0.000000033	0.000000039	N/D	0.000001262	N/D	N/D	0.000000664	0.000000061	N/A	0.000000119	N/A	0.000000247	0.000003488	0.000001225	0.000001166	0.000001479	0.000005430	N/D	0.000008556	0.000000853	N/A	N/A
	18-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	13-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	18-Jul-2024	**SPMD**	0.000000041	0.000000043	N/D	0.000000032	N/D	0.000000605	N/D	N/D	0.000000543	N/D	N/A	N/D	N/A	0.000000130	0.000000344	0.000000363	0.000000289	0.000000897	0.000004594	0.000000030	0.000002425	0.000000373	N/A	N/A
	16-Aug-2024	**SPMD**	0.000000039	0.000000028	N/D	0.000000035	N/D	0.000000436	N/D	N/D	0.000000253	N/D	N/A	0.000000040	N/A	0.000000112	0.000001885	0.000000311	0.000000375	0.000001247	0.000005033	0.000000032	0.000003002	0.000000334	N/A	N/A
	13-Sep-2024	**SPMD**	0.000000046	0.000000028	N/D	0.000000029	N/D	0.000000473	N/D	N/D	0.000000176	0.000000014	N/A	0.000000018	N/A	0.000000092	0.000000455	0.000000233	0.000000161	0.000000521	0.000002221	0.000000020	0.000001934	0.000000277	N/A	N/A
AEMP-US-05 (Upper Bosworth Creek)	19-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	12-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	19-Jul-2024	**SPMD**	N/D	0.000000027	N/D	N/D	N/D	0.000000321	N/D	N/D	0.000000462	N/D	N/A	0.000000036	N/A	0.000000030	0.000000317	0.000000269	0.000000212	0.000000684	0.000003633	0.000000026	0.000002159	0.000000177	N/A	N/A
	16-Aug-2024	**SPMD**	0.000000008	0.000000007	N/D	N/D	N/D	0.000000188	N/D	N/D	0.000000288	0.000000042	N/A	0.000000023	N/A	0.000000038	0.000002161	0.000000324	0.000000358	0.000000983	0.000005450	0.000000021	0.000002587	0.000000172	N/A	N/A
	12-Sep-2024	**SPMD**	0.000000030	0.000000013	N/D	0.000000019	0.000000009	0.000000275	N/D	0.000000011	0.000000226	N/D	N/A	0.000000000	N/A	0.000000061	0.000000455	0.000000225	0.000000172	0.000000506	0.000002050	0.000000023	0.000001934	0.000000203	N/A	N/A
QA/QC DATA																										
TRIP BLANK	21-Aug-2023	**SPMD**	N/D	N/D	N/D	N/D	N/D	0.000000005	N/D	N/D	0.000000150	N/D	N/A	0.000000013	N/A	N/D	0.000000627	0.000000101	0.000000052	0.000001037	0.000003631	N/A	0.000000407	0.000000027	N/A	N/A
	19-Jun-2024	**SPMD**	N/D	N/D	N/D	N/D	N/D	0.000000005	N/D	N/D	0.000000150	N/D	N/A	0.000000013	N/A	N/D	0.000000627	0.000000101	0.000000052	0.000001037	0.000003631	N/A	0.000000407	0.000000027	N/A	N/A
FIELD BLANK	21-Aug-2023	**SPMD**	N/D	N/D	N/D	N/D	N/D	0.000000007	N/D	N/D	0.000000150	N/D	N/A	0.000000008	N/A	N/D	0.000001451	0.000000053	0.000000078	0.000002158	0.000007509	N/A	0.000000483	0.000000024	N/A	N/A
	19-Jun-2024	**SPMD**	N/D	N/D	N/D	N/D	N/D	0.000000007	N/D	N/D	0.000000150	N/D	N/A	0.000000008	N/A	N/D	0.000001451	0.000000053	0.000000078	0.000002158	0.000007509	N/A	0.000000483	0.000000024	N/A	N/A
DAY ZERO	2023	**SPMD**	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	0.000000069	N/D	N/A	0.000000012	N/A	N/D	0.000000416	0.000000046	N/D	0.000000704	0.000002030	N/A	0.000000302	0.000000021	N/A	N/A
	2024	**SPMD**	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	0.000000069	N/D	N/A	0.000000012	N/A	N/D	0.000000416	0.000000046	N/D	0.000000704	0.000002030	N/A	0.000000302	0.000000021	N/A	N/A
Relative Percent Difference (RPD) Report																										
AEMP-DS-02 (Marine Dock)	20-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	20-Jul-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-02 (Marine Dock)	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	16-Aug-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-02 (Marine Dock)	20-Jul-2024	**SPMD**	0.00000005	0.00000004	N/D	0.00000004	N/D	0.00000094	N/D	N/D	0.00000072	N/D	N/A	N/D	N/A	0.00000015	0.00000184	0.00000043	0.00000201	0.00001013	0.00000798	0.00000023	0.00000023	0.00000113	N/A	N/A
(Duplicate)	20-Jul-2024	**SPMD**	0.00000005	0.00000003	N/D	0.00000003	N/D	0.00000058	N/D	N/D	0.00000031	N/D	N/A	N/D	N/A	0.00000010	0.00000118	0.00000023	0.00000114	0.00000664	0.00000398	0.00000011	0.00000914	0.00000069	N/A	N/A
RPD(%)			**0.0%**	**28.6%**	---	**28.6%**	---	**47.4%**	---	---	**79.6%**	---	---	---	---	**40.0%**	**43.7%**	**60.6%**	**55.2%**	**41.6%**	**66.9%**	**70.6%**	**190.2%**	**48.4%**	---	---
AEMP-DS-02 (Marine Dock)	16-Aug-2024	**SPMD**	0.00000015	0.00000012	N/D	0.00000011	0.00000003	0.00000238	N/D	N/D	0.00000044	0.00000012	N/A	0.00000013	N/A	0.00000042	0.00000306	0.00000081	0.00000214	0.00000469	0.00000394	0.00000032	0.00001489	0.00000196	N/A	N/A
(Duplicate)	16-Aug-2024	**SPMD**	0.00000004	0.00000004	N/D	0.00000003	N/D	0.00000077	N/D	N/D	0.00000027	0.00000007	N/A	0.00000008	N/A	0.00000013	0.00000226	0.00000028	0.00000131	0.00000279	0.00000194	0.00000009	0.00000817	0.00000069	N/A	N/A
RPD(%)			**115.8%**	**100.0%**	---	**114.3%**	---	**102.2%**	---	---	**47.9%**	**52.6%**	---	**47.6%**	---	**105.5%**	**30.1%**	**97.2%**	**48.1%**	**50.8%**	**68.0%**	**112.2%**	**58.3%**	**95.8%**	---	---
AEMP-DS-04 (Refinery)	18-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	18-Mar-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
(Duplicate)	13-Sep-2024	Grab	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	**SPMD**	0.000000546	0.000000182	N/D	N/D	0.000000079	0.000001164	0.000000009	0.000000022	0.000000022	0.000000042	N/A	0.000000284	N/A	0.000000220	0.000000587	0.000006536	0.000000755	0.000000956	0.000002969	0.000002969	0.000004543	0.000005382	N/A	N/A
(Duplicate)	13-Sep-2024	**SPMD**	0.000000180	0.000000057	N/D	0.000000010	0.000000025	0.000000398	N/D	0.000000006	0.000000399	0.000000020	N/A	0.000000119	N/A	0.000000070	0.000000353	0.000002561	0.000000334	0.000000589	0.000001759	0.000000015	0.000002181	0.000002153	N/A	N/A
RPD(%)			**100.8%**	**104.6%**	---	---	**103.8%**	**98.1%**	---	**114.3%**	**179.1%**	**71.0%**	---	**81.9%**	---	**103.4%**	**49.8%**	**87.4%**	**77.3%**	**47.5%**	**51.2%**	**198.0%**	**70.3%**	**85.7%**	---	---

Table 6

Surface Water Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	Polycyclic aromatic hydrocarbons (PAHs)|Carcinogenic								Polycyclic aromatic hydrocarbons (PAHs)|Non-Carcinogenic															
			Benzo(a)Anthracene (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(a)Pyrene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Biphenyl (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Retene (mg/L)	Quinoline (mg/L)
CCME CEQG Freshwater Aquatic Life [#1]			0.000018	---	---	---	0.000015	---	---	---	0.0058	---	0.0044	0.000012	---	---	---	0.00004	0.003	---	0.0011	---	0.0004	0.000025	---	0.0034
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	0.00004	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Federal Environmental Quality Guidelines [#3]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.15

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1] denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)
7. Superscript [#2] denotes values exceeding
   (Health Canada. 2022. Guidelines for Canadian Drinking Water Quality. Summary Table. Maximum Acceptable Concentration. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. September 2022.)
8. Superscript [#3] denotes values exceeding
   (ECCC. 2021. Federal Environmental Quality Guidelines Summary Table. Environment and Climate Change Canada, Ottawa, Ontario, January 2021.)
9. N/D indicates SPMD measured parameter below detection limit. Detection limits are given as per sample and have not been converted to a concentration. Detection limits are determined for each sample and analyte
10.. N/A indicates concentration coneversion not available.

Table 7

Surface Water Analytical Results: Alkylated Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	C1benzo[k]fluoranthene/benzo[a]pyrene (µg/L)	C1-Substituted Acenaphthene (µg/L)	C1-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C1-Substituted Biphenyl (µg/L)	C1-Substituted Dibenzothiophene (µg/L)	C1-Substituted Fluoranthene/Pyrene (µg/L)	C1-Substituted Fluorene (µg/L)	C1-Substituted Naphthalene (µg/L)	C1-Substituted Phenanthrene/Anthracene (µg/L)	C2benzo[k]fluoranthene/benzo[a]pyrene (µg/L)	C2-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C2-Substituted Biphenyl (µg/L)	C2-Substituted Dibenzothiophene (µg/L)	C2-Substituted Fluoranthene/Pyrene (µg/L)	C2-Substituted Fluorene (µg/L)	C2-Substituted Naphthalene (µg/L)	C2-Substituted Phenanthrene/Anthracene (µg/L)	C3-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C3-Substituted Dibenzothiophene (µg/L)	C3-Substituted Fluoranthene/Pyrene (µg/L)	C3-Substituted Fluorene (µg/L)	C3-Substituted Naphthalene (µg/L)	C3-Substituted Phenanthrene/Anthracene (µg/L)	C4-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C4-Substituted Dibenzothiophene (µg/L)	C4-Substituted Fluoranthene/Pyrene (µg/L)	C4-Substituted Naphthalene (µg/L)	C4-Substituted Phenanthrene/Anthracene (µg/L)	1,2-dimethylnaphthalene (µg/L)	2,6-Dimethylnaphthalene (µg/L)	2,3,5-trimethylnaphthalene (µg/L)	Dibenzothiophene (µg/L)	2-methylphenanthrene (µg/L)	1-Methylphenanthrene (µg/L)	3,6-dimethylphenanthrene (µg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NW AEMP V5																																							
MACKENZIE RIVER																																							
DOWNSTREAM																																							
AEMP-DS-02 (Marine Dock)	25-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	0.033	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	0.085	< 0.020	< 0.050	< 0.10	0.098	< 0.0085	0.048	< 0.020	0.073	< 0.10	0.14	< 0.0085	< 0.020	< 0.020	< 0.10	0.050	---	---	---	---	---	---	---
	18-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Aug-2023	**SPMD**	0.0079	---	---	---	---	0.0337	0.0072	0.0104	0.0225	0.049	---	---	---	0.06914	---	0.0371	0.0441	0.0792	---	0.04913	---	0.0524	---	0.0624	---	---	---	0.0723	0.0898	---	0.0031	0.008	0.0163	0.0052	0.012	0.0128	0.0038
	24-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	0.032	< 0.020	< 0.050	< 0.10	0.057	< 0.0075	< 0.0085	< 0.020	0.081	< 0.020	< 0.050	< 0.10	0.083	< 0.0085	0.040	< 0.020	0.087	< 0.10	0.092	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	24-Sep-2023	**SPMD**	0.0225	---	---	---	---	0.0387	0.0124	0.0122	0.0738	0.0388	---	---	---	0.15955	---	0.082	0.1729	0.1683	---	0.11514	---	0.1108	---	0.141	---	---	---	0.1499	0.1601	---	0.0083	0.0332	0.0398	0.0171	0.0323	0.009	0.0099
(Duplicate)	24-Sep-2023	**SPMD**	0.0034	---	---	---	---	0.0052	0.0022	0.002	0.0112	0.0059	---	---	---	0.0231	---	0.0126	0.026	0.0264	---	0.01757	---	0.0163	---	0.0011	---	---	---	0.0235	0.0318	---	0.0011	0.0047	0.0029	0.0015	0.0022	0.0014	0.0005
	18-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	20-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	0.067	< 0.020	< 0.050	< 0.10	0.10	< 0.0075	< 0.0085	0.025	0.065	< 0.020	0.064	0.11	0.075	< 0.0085	< 0.020	< 0.020	0.077	0.14	< 0.050	< 0.0085	< 0.020	< 0.020	0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	20-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	13-Sep-2024	Grab	< 0.10	< 0.10	0.014	< 0.10	0.036	< 0.020	0.14	0.042	< 0.050	< 0.10	0.20	0.015	0.13	< 0.020	0.40	0.12	0.17	< 0.10	0.44	0.052	0.24	0.26	0.45	0.20	0.59	< 0.0085	0.062	0.15	0.24	0.25	---	---	---	---	---	---	---
	20-Jul-2024	**SPMD**	0.0121	0.0101	---	---	---	---	0.0038	0.004	0.0011	0.0035	0.0038	---	---	---	0.0184	---	0.0094	0.0073	0.0119	---	0.0173	---	0.0108	---	0.0126	---	---	---	0.0265	0.0275	0.0047	0.001	0.0158	0.0072	0.0127	0.0019	0.0037
(Duplicate)	20-Jul-2024	**SPMD**	0.0079	0.0066	---	---	---	---	0.0551	0.0113	0.005	0.0263	0.0732	---	---	---	0.1524	---	0.0529	0.0739	0.1677	---	0.1224	---	0.0838	---	0.1282	---	---	---	0.1544	0.1485	0.0032	0.0131	0.01	0.0048	0.0079	0.0167	0.0021
	16-Aug-2024	**SPMD**	0.006	0.0047	---	---	---	---	0.0733	0.0113	0.017	0.0191	0.1032	---	---	---	0.2134	---	0.0703	0.0673	0.2509	---	0.1785	---	0.1146	---	0.1995	---	---	---	0.1469	0.2456	0.0036	0.0116	0.0182	0.0064	0.0158	0.0249	0.0064
(Duplicate)	16-Aug-2024	**SPMD**	0.0038	0.0028	---	---	---	---	0.0486	0.0077	0.0115	0.012	0.0688	---	---	---	0.1414	---	0.0475	0.0459	0.1626	---	0.1208	---	0.0762	---	0.131	---	---	---	0.0883	0.1627	0.002	0.008	0.007	0.0038	0.0068	0.0166	0.0021
	12-Sep-2024	**SPMD**	0.0247	0.0447	---	---	---	---	0.2723	0.0593	0.034	0.0889	0.4386	---	---	---	0.8781	---	0.3289	0.2358	1.1027	---	0.8796	---	0.4982	---	0.985	---	---	---	0.6658	1.4174	0.0104	0.0433	0.0495	0.0258	0.0587	0.1005	0.0174
AEMP-DS-03 (Island 3)	09-Mar-2023	Grab	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Aug-2023	**SPMD**	0.0009	---	---	---	---	0	0.001	0.001	0.003	0.003	---	---	---	0.00093	---	0.0022	0.0029	0.0032	---	0	---	0.0021	---	0.0022	---	---	---	0.0046	0.016	---	0.0002	0.0004	0.0007	8E-05	0.0004	0.0011	7E-05
	25-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	25-Sep-2023	**SPMD**	0.0016	---	---	---	---	8E-05	0.0009	0.0008	0.0051	0.0017	---	---	---	0.00157	---	0.0024	0.0048	0.0038	---	0.00131	---	0.0018	---	0.0023	---	---	---	0.0037	0.012	---	0.0004	0.0006	0.0009	0.0002	0.0009	0.0008	0.0002
	18-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	15-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	**SPMD**	0.0006	0.0008	---	---	---	---	0.0004	0.0010	0.0001	0.0025	0.0019	---	---	---	0.0012	---	0.0009	0.0023	0.0026	---	0.0015	---	0.0014	---	0.0123	---	---	---	0.0026	0.0071	0.0001	0.0004	0.0003	0.0001	0.0002	0.0005	0.0001
	15-Aug-2024	**SPMD**	0.0012	0.0008	---	---	---	---	0.0004	0.0010	0.0007	0.0035	0.0031	---	---	---	0.0014	---	0.0012	0.0034	0.0043	---	0.0011	---	0.0011	---	0.0031	---	---	---	0.0037	0.0211	0.0002	0.0005	0.0006	0.0001	0.0005	0.0012	0.0001
AEMP-DS-04 (Refinery)	11-Mar-2023	Grab	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	26-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	0.047	< 0.020	0.024	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	0.036	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Aug-2023	**SPMD**	0.006	---	---	---	---	0.022	0.0043	0.0071	0.0169	0.0317	---	---	---	0.04558	---	0.0262	0.0355	0.0491	---	0.0363	---	0.0323	---	0.0423	---	---	---	0.0529	0.0686	---	0.0021	0.0064	0.0097	0.0027	0.0062	0.0084	0.0018
	24-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	18-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	20-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	0.023	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	13-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	20-Jul-2024	**SPMD**	0.0091	0.0083	---	---	---	---	---	0.0057	0.0034	0.0314	0.0349	---	---	---	0.0671	---	0.0251	0.0848	0.0732	---	0.0574	---	0.0639	---	0.0591	---	---	---	0.0672	0.0877	0.0034	0.0162	0.0100	0.0037	0.0056	0.0079	0.0018
	18-Aug-2024	**SPMD**	0.0060	---	---	---	---	---	0.0220	0.0043	0.0071	0.0169	0.0317	---	---	---	0.0456	---	0.0262	0.0355	0.0491	---	0.0363	---	0.0323	---	0.0423	---	---	---	0.0529	0.0686	0.0021	0.0064	0.0097	0.0027	0.0062	0.0084	0.0018
	13-Sep-2024	**SPMD**	0.0051	0.0046	---	---	---	---	---	0.0059	0.0032	0.0162	0.0402	---	---	---	0.0623	---	0.0267	0.0448	0.0723	---	0.0454	---	0.0324	---	0.0492	---	---	---	0.0622	0.1184	0.0024	0.0084	0.0122	0.0040	0.0104	0.0112	0.0030
AEMP-DS-05 (Radar)	11-Mar-2023	Grab	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Aug-2023	**SPMD**	0.001	---	---	---	---	0.0008	0.0016	0.0015	0.0033	0.0051	---	---	---	0.00243	---	0.004	0.0043	0.0074	---	0.003	---	0.0041	---	0.0066	---	---	---	0.0073	0.0297	---	0.0003	0.0006	0.001	0.0001	0.0006	0.0019	0.0001
	26-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	0.012	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	0.034	< 0.020	0.047	0.031	< 0.050	< 0.10	0.062	0.010	0.044	0.078	0.058	< 0.10	0.14	< 0.0085	0.022	0.042	< 0.10	0.074	---	---	---	---	---	---	---
	26-Sep-2023	**SPMD**	0.0017	---	---	---	---	0.0007	0.0021	0.0011	0.0054	0.0029	---	---	---	0.00791	---	0.0047	0.0067	0.0136	---	0.01186	---	0.0072	---	0.0177	---	---	---	0.006	0.0377	---	0.0005	0.001	0.0015	0.0003	0.0019	0.0011	0.0006
	17-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	0.018	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	0.030	< 0.050	< 0.10	0.055	< 0.0085	< 0.020	0.028	< 0.10	< 0.050	---	---	---	---	---	---	---
	15-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	**SPMD**	0.0006	0.0006	---	---	---	---	0.0009	0.0014	0.0002	0.0021	0.0025	---	---	0.0012	0.0022	---	0.0012	0.0028	0.0045	---	0.0026	---	0.0020	---	0.0188	---	---	---	0.0040	0.0100	0.0001	0.0004	0.0004	0.0001	0.0004	0.0007	0.0001
	17-Sep-2024	**SPMD**	0.0014	0.0012	---	---	---	---	0.0008	0.0043	0.0011	0.0047	0.0121	---	---	---	0.0133	---	0.0066	0.0066	0.0297	---	0.0302	---	0.0097	---	0.0331	---	---	---	0.0126	0.1247	0.0004	0.0008	0.0013	0.0003	0.0020	0.0048	0.0006
AEMP-DS-06 (Fort Good Hope)	10-Mar-2023	Grab	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
(Duplicate)	10-Mar-2023	Grab	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	24-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	21-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050							

Surface Water Analytical Results: Alkylated Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	C1benzo[b]fluoranthene/benzo[a]pyrene (µg/L)	C1-Substituted Acenaphthene (µg/L)	C1-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C1-Substituted Biphenyl (µg/L)	C1-Substituted Dibenzothiophene (µg/L)	C1-Substituted Fluoranthene/Pyrene (µg/L)	C1-Substituted Fluorene (µg/L)	C1-Substituted Naphthalene (µg/L)	C1-Substituted Phenanthrene/Anthracene (µg/L)	C2benzo[b]fluoranthene/benzo[a]pyrene (µg/L)	C2-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C2-Substituted Biphenyl (µg/L)	C2-Substituted Dibenzothiophene (µg/L)	C2-Substituted Fluoranthene/Pyrene (µg/L)	C2-Substituted Fluorene (µg/L)	C2-Substituted Naphthalene (µg/L)	C2-Substituted Phenanthrene/Anthracene (µg/L)	C3-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C3-Substituted Dibenzothiophene (µg/L)	C3-Substituted Fluoranthene/Pyrene (µg/L)	C3-Substituted Fluorene (µg/L)	C3-Substituted Naphthalene (µg/L)	C3-Substituted Phenanthrene/Anthracene (µg/L)	C4-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C4-Substituted Dibenzothiophene (µg/L)	C4-Substituted Fluoranthene/Pyrene (µg/L)	C4-Substituted Naphthalene (µg/L)	C4-Substituted Phenanthrene/Anthracene (µg/L)	1,2-dimethylnaphthalene (µg/L)	2,6-Dimethylnaphthalene (µg/L)	2,3,5-trimethylnaphthalene (µg/L)	Dibenzothiophene (µg/L)	2-methylphenanthrene (µg/L)	1-Methylphenanthrene (µg/L)	3,6-dimethylphenanthrene (µg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	21-Aug-2023	**SPMD**	0.0012	---	---	---	---	0.0002	0.0008	0.0009	0.0031	0.0025	---	---	---	0.00086	---	0.0018	0.0031	0.0029	---	0.00114	---	0.0015	---	0.0022	---	---	---	0.0038	0.0139	---	0.0003	0.0004	0.0011	0.0001	0.0006	0.0009	0.0001
	03-Oct-2023	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	15-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	14-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	14-Aug-2024	**SPMD**	0.0008	0.0008	---	---	---	---	0.0007	0.0009	0.0001	0.0028	0.0026	---	---	---	0.0017	---	0.0009	0.0027	0.0040	---	0.0012	---	0.0011	---	0.0029	---	---	---	0.0028	0.0127	0.0001	0.0004	0.0003	0.0001	0.0003	0.0008	0.0001
AEMP-DS-07	17-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	14-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	14-Aug-2024	**SPMD**	0.0008	0.0005	---	---	---	---	0.0010	0.0011	0.0002	0.0025	0.0036	---	---	---	0.0026	---	0.0018	0.0028	0.0059	---	0.0023	---	0.0022	---	0.0044	---	---	---	0.0048	0.0225	0.0001	0.0003	0.0004	0.0001	0.0004	0.0012	0.0001
	18-Sep-2024	**SPMD**	0.0016	0.0006	---	---	---	---	0.0005	0.0016	0.0006	0.0026	0.0056	---	---	---	0.0033	---	0.0029	0.0034	0.0093	---	0.0032	---	0.0030	---	0.0067	---	---	---	0.0061	0.0334	0.0002	0.0004	0.0007	0.0002	0.0010	0.0022	0.0002
AEMP-DS-08	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	15-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	0.025	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	0.0088	< 0.020	0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	**SPMD**	0.0006	0.0006	---	---	---	---	0.0008	0.0015	0.0002	0.0020	0.0024	---	---	---	0.0023	---	0.0013	0.0026	0.0044	---	0.0022	---	0.0017	---	0.0114	---	---	---	0.0047	0.0105	0.0002	0.0004	0.0005	0.0001	0.0004	0.0006	0.0001
	15-Aug-2024	**SPMD**	0.0028	0.0011	---	---	---	---	0.0018	0.0022	0.0023	0.0070	0.0088	---	---	---	0.0057	---	0.0047	0.0074	0.0159	---	0.0073	---	0.0052	---	0.0146	---	---	---	0.0100	0.0657	0.0006	0.0009	0.0011	0.0002	0.0009	0.0034	0.0002
	17-Sep-2024	**SPMD**	0.0013	0.0011	---	---	---	---	0.0008	0.0047	0.0010	0.0044	0.0130	---	---	---	0.0136	---	0.0077	0.0061	0.0336	---	0.0197	---	0.0108	---	0.0295	---	---	---	0.0130	0.1177	0.0003	0.0008	0.0011	0.0002	0.0020	0.0052	0.0005
AEMP-DS-09	17-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	15-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	**SPMD**	0.0017	0.0033	---	---	---	---	0.0004	0.0010	0.0001	0.0090	0.0018	---	---	---	0.0013	---	0.0009	0.0023	0.0025	---	0.0018	---	0.0011	---	0.0222	---	---	---	0.0022	0.0071	0.0001	0.0004	0.0003	0.0001	0.0003	0.0005	0.0001
	15-Aug-2024	**SPMD**	0.0013	0.0007	---	---	---	---	0.0005	0.0009	0.0010	0.0034	0.0040	---	---	---	0.0018	---	0.0018	0.0036	0.0058	---	0.0011	---	0.0016	---	0.0037	---	---	---	0.0042	0.0272	0.0003	0.0004	0.0007	0.0001	0.0007	0.0015	0.0002
	17-Sep-2024	**SPMD**	0.0009	0.0007	---	---	---	---	0.0001	0.0018	0.0006	0.0028	0.0057	---	---	---	0.0018	---	0.0032	0.0031	0.0091	---	0.0021	---	0.0027	---	0.0058	---	---	---	0.0061	0.0418	0.0002	0.0003	0.0006	0.0001	0.0009	0.0025	0.0002
UPSTREAM																																							
AEMP-US-01 (Midway)	12-Mar-2023	Grab	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-US-01 (MidwaAEMP-dy)	25-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Aug-2023	**SPMD**	0.0025	---	---	---	---	0	0.0022	0.0031	0.0076	0.0074	---	---	---	0.00204	---	0.0059	0.0081	0.0089	---	0.0023	---	0.0053	---	0.0126	---	---	---	0.01	0.054	---	0.0007	0.0011	0.0024	0.0002	0.0014	0.003	0.0003
	26-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	16-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	15-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	**SPMD**	0.0009	0.0011	---	---	---	---	0.0005	0.0012	0.0001	0.0035	0.0020	---	---	---	0.0016	---	0.0009	0.0026	0.0030	---	0.0017	---	0.0020	---	0.0066	---	---	---	0.0027	0.0083	0.0002	0.0004	0.0004	0.0002	0.0004	0.0005	0.0001
	15-Aug-2024	**SPMD**	0.0042	0.0027	---	---	---	---	0.0004	0.0012	0.0030	0.0118	0.0081	---	---	---	0.0017	---	0.0050	0.0100	0.0098	---	0.0016	---	0.0031	---	0.0059	---	---	---	0.0187	0.0463	0.0011	0.0011	0.0025	0.0002	0.0018	0.0036	0.0003
	17-Sep-2024	**SPMD**	0.0016	0.0014	---	---	---	---	---	0.0031	0.0011	0.0051	0.0113	---	---	---	0.0017	---	0.0063	0.0056	0.0210	---	0.0025	---	0.0059	---	0.0125	---	---	---	0.0109	0.1028	0.0005	0.0006	0.0019	0.0002	0.0032	0.0052	0.0006
AEMP-US-02 (10 mile)	12-Mar-2023	Grab	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	25-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	24-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	15-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	17-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	**SPMD**	0.0006	0.0008	---	---	---	---	0.0006	0.0012	0.0001	0.0024	0.0020	---	---	---	0.0014	---	0.0009	0.0023	0.0030	---	0.0020	---	0.0022	---	0.0266	---	---	---	0.0031	0.0083	0.0001	0.0004	0.0004	0.0001	0.0004	0.0005	0.0001
	15-Aug-2024	**SPMD**	0.0024	0.0013	---	---	---	---	0.0004	0.0011	0.0014	0.0066	0.0050	---	---	---	0.0017	---	0.0023	0.0058	0.0067	---	0.0015	---	0.0018	---	0.0042	---	---	---	0.0063	0.0328	0.0005	0.0007	0.0009	0.0001	0.0006	0.0021	0.0001
	17-Sep-2024	**SPMD**	0.0012	0.0011	---	---	---	---	0.0001	0.0019	0.0009	0.0042	0.0080	---	---	---	0.0015	---	0.0042	0.0046	0.0118	---	0.0016	---	0.0035	---	0.0066	---	---	---	0.0042	0.0523	0.0003	0.0005	0.0010	0.0001	0.0015	0.0037	0.0003
AEMP-US-03 (Norman Wells Upstream)	09-Mar-2023	Grab	< 0.10	< 0.10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	17-Mar-2024	Grab	0.30	0.81	< 0.0075	< 0.10	< 0.0085	0.025	< 0.020	< 0.020	< 0.050	1.0	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	0.17	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	12-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	19-Jul-2024	**SPMD**	0.0007	0.0009	---	---	---	---	0.0007	0.0012	0.0001	0.0027	0.0020	---	---	---	0.0017	---	0.0009	0.0025	0.0031	---	0.0019	---	0.0012	---	0.0219	---	---	---	0.0033	0.0079	0.0002	0.0003	0.0005	0.0002	0.0004	0.0005	0.0001
	16-Aug-2024	**SPMD**	0.0030	0.0019	---	---	---	---	0.0006	0.0013	0.0008	0.0088	0.0070	---	---	---	0.0024	---	0.0035	0.0074	0.0090	---	0.0026	---	0.0026	---	0.0056	---	---	---	0.0074	0.0416	0.0007	0.0003	0.0013	0.0002	0.0010	0.0025	0.0002
	13-Sep-2024	**SPMD**	0.0011	0.0009	---	---	---	---	0.0002	0.0019	0.0009	0.0036	0.0082	---	---	---	0.0028	---	0.0048	0.0044	0.0116	---	0.0029	---	0.0037	---	0.0063	---	---	---	0.0076	0.0474	0.0004	0.0005	0.0014	0.0002	0.0021	0.0037	0.0004
BOSWORTH CREEK																																							
DOWNSTREAM																																							
AEMP-DS-01 (Lower Bosworth Creek)	26-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	18-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---

Surface Water Analytical Results: Alkylated Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	C1benzo[k]fluoranthene/benzo[a]pyrene (µg/L)	C1-Substituted Acenaphthene (µg/L)	C1-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C1-Substituted Biphenyl (µg/L)	C1-Substituted Dibenzothiophene (µg/L)	C1-Substituted Fluoranthene/Pyrene (µg/L)	C1-Substituted Fluorene (µg/L)	C1-Substituted Naphthalene (µg/L)	C1-Substituted Phenanthrene/Anthracene (µg/L)	C2benzo[k]fluoranthene/benzo[a]pyrene (µg/L)	C2-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C2-Substituted Biphenyl (µg/L)	C2-Substituted Dibenzothiophene (µg/L)	C2-Substituted Fluoranthene/Pyrene (µg/L)	C2-Substituted Fluorene (µg/L)	C2-Substituted Naphthalene (µg/L)	C2-Substituted Phenanthrene/Anthracene (µg/L)	C3-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C3-Substituted Dibenzothiophene (µg/L)	C3-Substituted Fluoranthene/Pyrene (µg/L)	C3-Substituted Fluorene (µg/L)	C3-Substituted Naphthalene (µg/L)	C3-Substituted Phenanthrene/Anthracene (µg/L)	C4-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C4-Substituted Dibenzothiophene (µg/L)	C4-Substituted Fluoranthene/Pyrene (µg/L)	C4-Substituted Naphthalene (µg/L)	C4-Substituted Phenanthrene/Anthracene (µg/L)	1,2-dimethylnaphthalene (µg/L)	2,6-Dimethylnaphthalene (µg/L)	2,3,5-trimethylnaphthalene (µg/L)	Dibenzothiophene (µg/L)	2-methylphenanthrene (µg/L)	1-Methylphenanthrene (µg/L)	3,6-dimethylphenanthrene (µg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Aug-2023	**SPMD**	0.0046	---	---	---	---	0.0034	0.0035	0.0052	0.0129	0.0091	---	---	---	0.0118	---	0.0124	0.0134	0.0134	---	0.0113	---	0.0124	---	0.0155	---	---	---	---	0.0221	0.0572	---	0.0017	0.0019	0.0047	0.0007	0.0028	0.0033	0.0009
	25-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	25-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	25-Sep-2023	**SPMD**	0.0024	---	---	---	---	0.0009	0.0012	0.0013	0.0055	0.0009	---	---	---	0.00601	---	0.0049	0.0082	0.0045	---	0.00624	---	0.0055	---	0.0063	---	---	---	---	0.0102	0.0156	---	0.0014	0.0012	0.0033	0.0008	0.0018	0.0003	0.0009
	18-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	13-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	13-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Jul-2024	**SPMD**	0.0013	0.0015	---	---	---	---	0.0022	0.0011	0.0006	0.0039	0.0018	---	---	---	---	---	0.0040	0.0061	---	---	0.0068	---	0.0047	---	0.0249	---	---	---	0.0111	0.0121	0.0009	0.0009	0.0017	0.0005	0.0007	0.0004	0.0004
	16-Aug-2024	**SPMD**	0.0039	0.0036	---	---	---	---	0.0024	0.0013	0.0006	0.0046	0.0029	---	---	---	0.0088	---	0.0050	0.0058	0.0064	---	0.0078	---	0.0053	---	0.0078	---	---	---	0.0136	0.0172	0.0012	0.0009	0.0029	0.0005	0.0017	0.0008	0.0005
	13-Sep-2024	**SPMD**	0.0011	0.0010	---	---	---	---	0.0038	0.0040	0.0011	0.0035	0.0038	---	---	---	0.0184	---	0.0094	0.0073	0.0119	---	0.0173	---	0.0108	---	0.0126	---	---	---	0.0265	0.0275	0.0009	0.0010	0.0016	0.0004	0.0010	0.0010	0.0007
(Duplicate)	13-Sep-2024	**SPMD**	0.0006	0.0006	---	---	---	---	0.0031	0.0037	0.0008	0.0022	0.0031	---	---	---	0.0166	---	0.0081	0.0053	0.0105	---	0.0160	---	0.0094	---	0.0128	---	---	---	0.0287	0.0262	0.0005	0.0008	0.0007	0.0002	0.0004	0.0008	0.0003
UPSTREAM																																							
AEMP-US-04 (Bosworth Creek)	26-Jul-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Aug-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Aug-2023	**SPMD**	0.0035	---	---	---	---	0.0014	0.0017	0.0025	0.009	0.0067	---	---	---	0.00675	---	0.0057	0.008	0.01	---	0.01035	---	0.0071	---	0.0192	---	---	---	0.011	0.048	---	0.0011	0.0011	0.0034	0.0004	0.002	0.0025	0.0006
	24-Sep-2023	PDB	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	24-Sep-2023	**SPMD**	0.0016	---	---	---	---	0.0004	0.0013	0.0005	0.004	0.0017	---	---	---	0.00857	---	0.0038	0.0056	0.0098	---	0.01193	---	0.0065	---	0.0177	---	---	---	0.01	0.041	---	0.0007	0.0008	0.0034	0.0004	0.0028	0.0005	0.0013
	18-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	13-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	0.019	< 0.020	0.021	0.040	< 0.050	< 0.10	< 0.050	< 0.0085	0.021	0.081	0.078	< 0.10	0.072	< 0.0085	< 0.020	0.041	< 0.10	0.066	---	---	---	---	---	---	---
	18-Jul-2024	**SPMD**	0.0007	0.0009	---	---	---	---	0.0021	0.0019	0.0006	0.0028	0.0040	---	---	---	0.0105	---	0.0032	0.0028	0.0120	---	0.0149	---	0.0059	---	0.0394	---	---	---	0.0111	0.0318	0.0002	0.0004	0.0008	0.0004	0.0007	0.0011	0.0004
	16-Aug-2024	**SPMD**	0.0012	0.0012	---	---	---	---	0.0020	0.0010	0.0008	0.0042	0.0046	---	---	---	0.0090	---	0.0029	0.0043	0.0115	---	0.0122	---	0.0046	---	0.0137	---	---	---	0.0099	0.0300	0.0003	0.0006	0.0011	0.0002	0.0009	0.0013	0.0004
	13-Sep-2024	**SPMD**	0.0006	0.0005	---	---	---	---	0.0017	0.0017	0.0002	0.0145	0.0039	---	---	---	0.0119	---	0.0031	0.0034	0.0121	---	0.0179	---	0.0063	---	0.0151	---	---	---	0.0145	0.0368	0.0002	0.0005	0.0013	0.0002	0.0009	0.0011	0.0005
AEMP-US-05 (Upper Bosworth Creek)	19-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	12-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
	18-Jul-2024	**SPMD**	0.0006	0.0007	---	---	---	---	0.0005	0.0005	0.0001	0.0021	0.0022	---	---	---	0.0020	---	0.0007	0.0016	0.0035	---	0.0034	---	0.0015	---	0.0323	---	---	---	0.0022	0.0079	0.0001	0.0002	0.0003	0.0001	0.0004	0.0007	0.0001
	16-Aug-2024	**SPMD**	0.0010	0.0010	---	---	---	---	0.0007	0.0003	0.0002	0.0036	0.0027	---	---	---	0.0021	---	0.0010	0.0029	0.0045	---	0.0026	---	0.0013	---	0.0040	---	---	---	0.0031	0.0133	0.0002	0.0004	0.0004	0.0001	0.0004	0.0010	0.0001
	12-Sep-2024	**SPMD**	0.0005	0.0005	---	---	---	---	0.0008	0.0008	0.0005	0.0016	0.0028	---	---	---	0.0056	---	0.0017	0.0024	0.0068	---	0.0094	---	0.0035	---	0.0079	---	---	---	0.0070	0.0205	0.0002	0.0003	0.0007	0.0001	0.0006	0.0008	0.0003
Relative Percent Difference (RPD) Report																																							
AEMP-DS-02 (Marine Dock)	20-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	0.067	< 0.020	< 0.050	< 0.10	0.10	< 0.0075	< 0.0085	0.025	0.065	< 0.020	0.064	0.11	0.075	< 0.0085	< 0.020	< 0.020	0.077	0.14	< 0.050	< 0.0085	< 0.020	< 0.020	0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	20-Jul-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-02 (Marine Dock)	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	16-Aug-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-02 (Marine Dock)	20-Jul-2024	**SPMD**	0.0121	0.0101	---	---	---	---	0.0038	0.004	0.0011	0.0035	0.0038	---	---	---	0.0184	---	0.0094	0.0073	0.0119	---	0.0173	---	0.0108	---	0.0126	---	---	---	0.0265	0.0275	0.0047	0.001	0.0158	0.0072	0.0127	0.0019	0.0037
(Duplicate)	20-Jul-2024	**SPMD**	0.0079	0.0066	---	---	---	---	0.0551	0.0113	0.005	0.0263	0.0732	---	---	---	0.1524	---	0.0529	0.0739	0.1677	---	0.1224	---	0.0838	---	0.1282	---	---	---	0.1544	0.1485	0.0032	0.0131	0.01	0.0048	0.0079	0.0167	0.0021
RPD(%)			**42.0%**	**41.9%**	---	---	---	---	**174.2%**	**95.4%**	**127.9%**	**153.0%**	**180.3%**	---	---	---	**156.9%**	---	**139.6%**	**164.0%**	**173.5%**	---	**150.5%**	---	**154.3%**	---	**164.2%**	---	---	---	**141.4%**	**137.5%**	**38.0%**	**171.6%**	**45.0%**	**40.0%**	**46.6%**	**159.1%**	**55.2%**
AEMP-DS-02 (Marine Dock)	16-Aug-2024	**SPMD**	0.006	0.0047	---	---	---	---	0.0733	0.0113	0.017	0.0191	0.1032	---	---	---	0.2134	---	0.0703	0.0673	0.2509	---	0.1785	---	0.1146	---	0.1995	---	---	---	0.1469	0.2456	0.0036	0.0116	0.0182	0.0064	0.0158	0.0249	0.0064
(Duplicate)	16-Aug-2024	**SPMD**	0.0038	0.0028	---	---	---	---	0.0486	0.0077	0.0115	0.012	0.0688	---	---	---	0.1414	---	0.0475	0.0459	0.1626	---	0.1208	---	0.0762	---	0.131	---	---	---	0.0883	0.1627	0.002	0.008	0.007	0.0038	0.0068	0.0166	0.0021
RPD(%)			**44.9%**	**50.7%**	---	---	---	---	**40.5%**	**37.9%**	**38.6%**	**45.7%**	**40.0%**	---	---	---	**40.6%**	---	**38.7%**	**37.8%**	**42.7%**	---	**38.6%**	---	**40.3%**	---	**41.5%**	---	---	---	**49.8%**	**40.6%**	**57.1%**	**36.7%**	**88.9%**	**51.0%**	**79.6%**	**40.0%**	**101.2%**
AEMP-DS-04 (Refinery)	18-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	18-Mar-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
(Duplicate)	13-Sep-2024	Grab	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050	---	---	---	---	---	---	---
RPD(%)			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AEMP-DS-01 (Lower Bosworth Creek)	13-Sep-2024	**SPMD**	0.0011	0.0010	---	---	---	---	0.0038	0.0040	0.0011	0.0035	0.0038	---	---	---	0.0184	---	0.0094	0.0073	0.0119	---	0.0173	---	0.0108	---	0.0126	---	---	---	0.0265	0.0275	0.0009	0.0010	0.0016	0.0004	0.0010	0.0010	0.0007
(Duplicate)	13-Sep-2024	**SPMD**	0.0006	0.0006	---	---	---	---	0.0031	0.0037	0.0008	0.0022	0.0031	---	---	---	0.0166	---	0.0081	0.0053	0.0105	---	0.0160	---	0.0094	---	0.0128	---	---	---	0.0287	0.0262	0.0005	0.0008	0.0007	0.0002	0.0004	0.0008	0.0003
RPD(%)			**58.8%**	**50.0%**	---	---	---	---	**20.3%**	**7.8%**	**31.6%**	**45.6%**	**20.3%**	---	---	---	**10.3%**	---	**14.9%**	**31.7%**	**12.5%**	---	**7.8%**	---	**13.9%**	---	**1.6%**	---	---	---	**8.0%**	**4.8%**	**57.1%**	**22.2%**	**78.3%**	**66.7%**	**85.7%**	**22.2%**	**80.0%**

Table 7

Surface Water Analytical Results: Alkylated Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Type	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	C1benzobjkfluoranthene/benzoapyrene (µg/L)	C1-Substituted Acenaphthene (µg/L)	C1-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C1-Substituted Biphenyl (µg/L)	C1-Substituted Dibenzothiophene (µg/L)	C1-Substituted Fluoranthene/Pyrene (µg/L)	C1-Substituted Fluorene (µg/L)	C1-Substituted Naphthalene (µg/L)	C1-Substituted Phenanthrene/Anthracene (µg/L)	C2benzobjkfluoranthene/benzoapyrene (µg/L)	C2-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C2-Substituted Biphenyl (µg/L)	C2-Substituted Dibenzothiophene (µg/L)	C2-Substituted Fluoranthene/Pyrene (µg/L)	C2-Substituted Fluorene (µg/L)	C2-Substituted Naphthalene (µg/L)	C2-Substituted Phenanthrene/Anthracene (µg/L)	C3-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C3-Substituted Dibenzothiophene (µg/L)	C3-Substituted Fluoranthene/Pyrene (µg/L)	C3-Substituted Fluorene (µg/L)	C3-Substituted Naphthalene (µg/L)	C3-Substituted Phenanthrene/Anthracene (µg/L)	C4-Substituted Benzo[a]anthracene/Chrysene (µg/L)	C4-Substituted Dibenzothiophene (µg/L)	C4-Substituted Fluoranthene/Pyrene (µg/L)	C4-Substituted Naphthalene (µg/L)	C4-Substituted Phenanthrene/Anthracene (µg/L)	1,2-dimethylnaphthalene (µg/L)	2,6-Dimethylnaphthalene (µg/L)	2,3,5-trimethylnaphthalene (µg/L)	Dibenzothiophene (µg/L)	2-methylphenanthrene (µg/L)	1-Methylphenanthrene (µg/L)	3,6-dimethylphenanthrene (µg/L)
CCME CEQG Freshwater Aquatic Life [#1]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Canadian Drinking Water Quality Guidelines 2022 - MAC [#2]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1]denotes values exceeding
   (CCME. 2014. Canadian Environmental Quality Guidelines Summary Table. Water Quality Guidelines for the Protection of Freshwater Aquatic Life. http://st-ts.ccme.ca/?chems=all&chapters=1 accessed Aug 22, 2014.)

Physical Parameters of Slimy Sculpin collected from Bosworth Creek in 2024

Project Number: 417085-54419

	Collection Date	Fish #	Sex	Lab Sample ID	Analysis Type[1]	Total Length	Weight	Liver Weight	Hepatosomatic Index (HSI)	Gonad Weight	Gonadosomatic Index (GSI)	Fulton's Condition Factor	Comments/Pathology Notes
	(d/m/yr)					*(mm)*	*(g)*	*(g)*		*(g)*			
AMEP-FS-03 (Bosworth Creek - Upper Reach)													
	11-Sep-24	1	M	AEMP-FS-03-1	Metals; Protein	72	3.680	0.085	2.3	0.092	2.5	0.99	
	11-Sep-24	2	F	AEMP-FS-03-2	Metals; Protein	87	5.675	0.138	2.4	0.098	1.7	0.86	
	11-Sep-24	3	F	AEMP-FS-03-3	Metals; Protein	77	3.752	0.104	2.8	0.077	2.1	0.82	
	11-Sep-24	4	F	AEMP-FS-03-4	Metals; Protein	75	3.607	0.096	2.7	0.059	1.6	0.85	
	11-Sep-24	5	F	AEMP-FS-03-5	Metals; Protein	88	5.555	0.106	1.9	0.087	1.6	0.82	
	11-Sep-24	6	F	AEMP-FS-03-6	Metals; Protein	80	4.139	0.096	2.3	0.078	1.9	0.81	
	11-Sep-24	7	F	AEMP-FS-03-7	---	76	3.532	0.052	1.5	0.039	1.1	0.80	
	11-Sep-24	8	F	AEMP-FS-03-8	Metals; Protein	68	2.664	0.060	2.3	0.045	1.7	0.85	Cysts post stomach and intestine.
	11-Sep-24	9	F	AEMP-FS-03-9	---	67	2.449	0.040	1.6	0.033	1.3	0.81	
	11-Sep-24	10	M	AEMP-FS-03-10	Metals; Protein	76	3.994	0.084	2.1	0.098	2.5	0.91	
	11-Sep-24	11	U		PAHs	67	2.780	0.016	0.6	NA	NA	0.92	No gonads most likely due to parasites. Not included in health analysis due to potential parasite influence.
	11-Sep-24	12	M	AEMP-FS-03-11	Metals; Protein	65	2.016	0.037	1.8	0.035	1.7	0.73	
	11-Sep-24	13	F		PAHs	64	2.263	0.068	3.0	0.065	2.9	0.86	Cysts along stomach.
	11-Sep-24	14	F		PAHs	66	2.239	0.032	1.4	0.028	1.3	0.78	
	11-Sep-24	15	U		PAHs	54	1.265	0.015	1.2	NA	NA	0.80	Not included in health metric analysis due to limited gonad development/immaturity.
	11-Sep-24	16	F		PAHs	56	1.490	0.023	1.5	0.034	2.3	0.85	Cysts on gonads.
	11-Sep-24	17	U		PAHs	52	1.175	0.039	3.3	NA	NA	0.84	Not included in health metric analysis due to limited gonad development/immaturity.
	11-Sep-24	18	U		PAHs	61	1.741	0.015	0.9	NA	NA	0.77	Few cysts. Not included in health metric analysis due to limited gonad development/immaturity.
	11-Sep-24	19	U		PAHs	55	1.292	0.004	0.3	NA	NA	0.78	Not included in health metric analysis due to limited gonad development/immaturity.
	11-Sep-24	20	M	AEMP-FS-03-12	---	59	1.505	0.023	1.5	0.023	1.5	0.73	Cysts along kidney.
	11-Sep-24	21	F		PAHs	61	1.879	0.021	1.1	0.033	1.8	0.83	
	12-Sep-24	22	M		PAHs	59	1.567	0.012	0.8	0.025	1.6	0.76	
	12-Sep-24	23	F	AEMP-FS-03-13	Metals; Protein	86	4.895	0.152	3.1	0.099	2.0	0.77	
	12-Sep-24	24	F		PAHs	59	1.584	0.029	1.8	0.023	1.5	0.77	
	12-Sep-24	25	M		PAHs	55	1.413	0.006	0.4	0.027	1.9	0.85	
	12-Sep-24	26	M	AEMP-FS-03-14	Metals; Protein	66	2.178	0.028	1.3	0.035	1.6	0.76	
	12-Sep-24	27	M	AEMP-FS-03-15	Metals; Protein	61	2.000	0.037	1.9	0.043	2.2	0.88	Cysts on testis, stomach, and intestine.
	12-Sep-24	28	F	AEMP-FS-03-16	---	67	2.705	0.045	1.7	0.022	0.8	0.90	
	12-Sep-24	29	F	AEMP-FS-03-17	Metals; Protein	93	5.237	0.092	1.8	0.107	2.0	0.65	
	12-Sep-24	30	F		PAHs	60	1.824	0.039	2.1	0.036	2.0	0.84	
	12-Sep-24	31	M		PAHs	60	1.125	0.028	2.5	0.024	2.1	0.52	
	12-Sep-24	32	M	AEMP-FS-03-18	Metals; Protein	85	5.113	0.069	1.3	0.099	1.9	0.83	
	12-Sep-24	33	F	AEMP-FS-03-19	---	74	3.449	0.071	2.1	0.058	1.7	0.85	
	12-Sep-24	34	F		PAHs	68	2.105	0.045	2.1	0.040	1.9	0.67	
	12-Sep-24	35	F		PAHs	71	2.872	0.079	2.8	0.039	1.4	0.80	
	12-Sep-24	36	F	AEMP-FS-03-20	Metals; Protein	80	4.194	0.112	2.7	0.053	1.3	0.82	
	12-Sep-24	37	F		PAHs	74	3.327	0.085	2.6	0.044	1.3	0.82	

Physical Parameters of Slimy Sculpin collected from Bosworth Creek in 2024

Project Number: 417085-54419

	Collection Date	Fish #	Sex	Lab Sample ID	Analysis Type[1]	Total Length	Weight	Liver Weight	Hepatosomatic Index (HSI)	Gonad Weight	Gonadosomatic Index (GSI)	Fulton's Condition Factor	Comments/Pathology Notes
	(d/m/yr)					*(mm)*	*(g)*	*(g)*		*(g)*			
	12-Sep-24	38	F		PAHs	57	1.287	0.018	1.4	0.014	1.1	0.69	Not included in health metric analyses due to under developed gonads indicating immaturity.
	12-Sep-24	39	F		PAHs	57	1.624	0.038	2.3	0.020	1.2	0.88	
	12-Sep-24	40	M	AEMP-FS-03-21	Metals; Protein	57	1.626	0.025	1.5	0.031	1.9	0.88	
	12-Sep-24	41	M	AEMP-FS-03-22	---	61	1.693	0.016	0.9	0.003	0.2	0.75	Immaturity confirmed statistically, removed from health metric analysis.
	12-Sep-24	42	F		PAHs	59	1.619	0.036	2.2	0.020	1.2	0.79	
	12-Sep-24	43	F		PAHs	60	1.730	0.038	2.2	0.027	1.6	0.80	
	12-Sep-24	44	M	AEMP-FS-03-23	---	57	1.258	0.018	1.4	0.008	0.6	0.68	
	12-Sep-24	45	M	AEMP-FS-03-24	---	58	1.418	0.016	1.1	0.022	1.6	0.73	
	12-Sep-24	46	U		PAHs	55	1.252	0.016	1.3	NA	NA	0.75	Not included in health metric analysis due to limited gonad development/immaturity.
	12-Sep-24	47	M	AEMP-FS-03-25	---	55	1.536	0.018	1.2	0.018	1.2	0.92	
	16-Sep-24	145	F	AEMP-FS-03-26	Metals; Protein	90	5.792	0.136	2.3	0.122	2.1	0.79	
	16-Sep-24	146	F		PAHs	83	4.194	0.075	1.8	0.094	2.2	0.73	Died in field.
	16-Sep-24	147	M	AEMP-FS-03-27	Metals; Protein	65	2.359	0.036	1.5	0.016	0.7	0.86	Immaturity confirmed statistically, removed from health metric analysis.
	16-Sep-24	148	M	AEMP-FS-03-28	Metals; Protein	65	2.360	0.031	1.3	0.061	2.6	0.86	
	16-Sep-24	149	M	AEMP-FS-03-29	Metals; Protein	61	1.905	0.031	1.6	0.015	0.8	0.84	Immaturity confirmed statistically, removed from health metric analysis.
	16-Sep-24	150	F	AEMP-FS-03-30	---	69	2.748	0.049	1.8	0.042	1.5	0.84	
	16-Sep-24	151	F	AEMP-FS-03-31	---	70	3.020	0.089	2.9	0.046	1.5	0.88	
	Average					67	2.624	0.051	1.8	0.047	1.6	0.81	
AEMP-FS-02 (Bosworth Creek - Lower Reach)													
	15-Sep-24	94	M	AEMP-FS-02-01	Metals; Protein	84	5.373	0.128	2.4	0.137	2.5	0.91	Picture collested in MS-222 with potential female. Larger individual in picture.
	15-Sep-24	95	F	AEMP-FS-02-02	Metals; Protein	80	4.113	0.122	3.0	0.082	2.0	0.80	Picture collected in MS-222 with Male. Male is larger individual in picture. First dissection photos from SEPT 15.
	15-Sep-24	96	M	AEMP-FS-02-03	Metals; Protein	74	3.824	0.110	2.9	0.070	1.8	0.94	Large ivertebrate in stomach.
	15-Sep-24	97	F	AEMP-FS-02-04	Metals; Protein	67	2.549	0.095	3.7	0.033	1.3	0.85	
	15-Sep-24	98	M	AEMP-FS-02-05	Metals; Protein	65	2.443	0.052	2.1	0.047	1.9	0.89	
	15-Sep-24	99	M	AEMP-FS-02-06	---	60	1.973	0.028	1.4	0.036	1.8	0.91	
	15-Sep-24	100	F	AEMP-FS-02-07	Metals; Protein	74	2.974	0.060	2.0	0.052	1.7	0.73	
	15-Sep-24	101	F	AEMP-FS-02-08	Metals; Protein	87	5.883	0.196	3.3	0.096	1.6	0.89	
	15-Sep-24	102	M		PAHs	65	2.250	0.033	1.5	0.038	1.7	0.82	
	15-Sep-24	103	M	AEMP-FS-02-09	Metals; Protein	70	2.692	0.067	2.5	0.058	2.2	0.78	
	15-Sep-24	104	F	AEMP-FS-02-10	Metals; Protein	70	3.292	0.097	2.9	0.07	2.1	0.96	
	15-Sep-24	105	M	AEMP-FS-02-11	Metals; Protein	76	4.117	0.096	2.3	0.067	1.6	0.94	
	15-Sep-24	106	F	AEMP-FS-02-12	Metals; Protein	72	3.171	0.046	1.5	0.045	1.4	0.85	Pale liver colouration.
	15-Sep-24	107	F	AEMP-FS-02-13	Metals; Protein	70	2.755	0.064	2.3	0.041	1.5	0.80	
	15-Sep-24	108	M	AEMP-FS-02-14	---	65	2.483	0.041	1.7	0.056	2.3	0.90	
	15-Sep-24	109	F		PAHs	59	1.751	0.033	1.9	0.017	1.0	0.85	
	15-Sep-24	110	M	AEMP-FS-02-15	Metals; Protein	65	2.662	0.076	2.9	0.047	1.8	0.97	
	15-Sep-24	111	M	AEMP-FS-02-16	Metals; Protein	69	2.798	0.055	2.0	0.051	1.8	0.85	
	15-Sep-24	112	U		---	60	1.718	0.021	1.2	NA	NA	0.80	Parasite resulted in no gonad development. Not included in health metric analysis due to potenitial parasite influence.

Physical Parameters of Slimy Sculpin collected from Bosworth Creek in 2024

Project Number: 417085-54419

	Collection Date	Fish #	Sex	Lab Sample ID	Analysis Type[1]	Total Length	Weight	Liver Weight	Hepatosomatic Index (HSI)	Gonad Weight	Gonadosomatic Index (GSI)	Fulton's Condition Factor	Comments/Pathology Notes
	(d/m/yr)					*(mm)*	*(g)*	*(g)*		*(g)*			
	15-Sep-24	113	M	AEMP-FS-02-17	---	71	3.060	0.046	1.5	0.075	2.5	0.85	
	15-Sep-24	114	F	AEMP-FS-02-19	---	65	2.141	0.061	2.8	0.029	1.4	0.78	
	15-Sep-24	115	M	AEMP-FS-02-18	Metals; Protein	81	5.193	0.091	1.8	0.135	2.6	0.98	
	15-Sep-24	116	F	AEMP-FS-02-20	Metals; Protein	65	2.208	0.060	2.7	0.028	1.3	0.80	Pale liver. Right dorsal/caudal wound. May have been subjected to double dose of MS-222.
	15-Sep-24	117	M		PAHs	61	1.972	0.040	2.0	0.034	1.7	0.87	Body cavity filled with white cysts.
	15-Sep-24	118	F	AEMP-FS-02-21	Metals; Protein	69	2.664	0.084	3.2	0.051	1.9	0.81	
	15-Sep-24	119	F	AEMP-FS-02-22	Metals; Protein	69	2.455	0.081	3.3	0.038	1.5	0.75	Pale liver colouration.
	15-Sep-24	120	F		PAHs	59	1.637	0.059	3.6	0.030	1.8	0.80	
	15-Sep-24	121	F		PAHs	63	2.178	0.059	2.7	0.037	1.7	0.87	
	15-Sep-24	122	M		PAHs	62	2.111	0.045	2.1	0.034	1.6	0.89	
	15-Sep-24	123	F		PAHs	61	1.820	0.051	2.8	0.032	1.8	0.80	
	15-Sep-24	124	F		PAHs	59	1.570	0.031	2.0	0.018	1.1	0.76	
	15-Sep-24	125	M	AEMP-FS-02-23	Metals; Protein	99	8.279	0.362	4.4	0.178	2.2	0.85	Liver appears to have steaosis or tumor formation. White portions submittedd with liver tissue for MFO analysis. Liver re-weighed and weight confirmed.
	16-Sep-24	126	U		---	54	1.274	0.026	2.0	NA	NA	0.81	Not included in health metric analysis due to potenitial parasite influence.
	16-Sep-24	127	F		PAHs	65	3.360	0.084	2.5	0.028	0.8	1.22	
	16-Sep-24	128	M	AEMP-FS-02-24	Metals; Protein	81	4.629	0.071	1.5	0.086	1.9	0.87	
	16-Sep-24	129	F		PAHs	86	5.152	0.070	1.4	0.099	1.9	0.81	
	16-Sep-24	130	F		PAHs	59	1.583	0.028	1.8	0.024	1.5	0.77	
	16-Sep-24	131	M		PAHs	55	1.444	0.028	1.9	0.039	2.7	0.87	
	16-Sep-24	132	F		PAHs	58	1.604	0.046	2.9	0.021	1.3	0.82	
	16-Sep-24	133	F		PAHs	58	1.525	0.03	2.0	0.02	1.3	0.78	
	16-Sep-24	134	F		PAHs	61	1.807	0.032	1.8	0.021	1.2	0.80	
	16-Sep-24	135	M		PAHs	59	1.696	0.014	0.8	0.026	1.5	0.83	
	16-Sep-24	136	F		PAHs	75	3.629	0.124	3.4	0.044	1.2	0.86	
	16-Sep-24	141	M		PAHs	81	4.879	0.116	2.4	0.120	2.5	0.92	
	16-Sep-24	142	M		PAHs	60	1.666	0.02	1.2	0.036	2.2	0.77	
	16-Sep-24	143	M		PAHs	68	2.671	0.058	2.2	0.055	2.1	0.85	
	16-Sep-24	144	F		PAHs	58	1.400	0.031	2.2	0.026	1.9	0.72	
	Average					68	2.860	0.070	2.3	0.053	1.8	0.85	
AEMP-FS-01 (Middle reach Bosworth Creek)													
	13-Sep-24	48	F		PAHs	64	1.946	0.03	1.5	0.028	1.4	0.74	Cysts around intestine and gonads.
	13-Sep-24	49	M	AEMP-FS-01-1	Metals; Protein	71	3.167	0.058	1.8	0.058	1.8	0.88	
	13-Sep-24	50	F	AEMP-FS-01-2	---	60	1.695	0.039	2.3	0.019	1.1	0.78	
	13-Sep-24	51	M	AEMP-FS-01-3	Metals; Protein	67	2.428	0.036	1.5	0.047	1.9	0.81	
	13-Sep-24	52	M	AEMP-FS-01-4	Metals; Protein	90	6.073	0.096	1.6	0.115	1.9	0.83	Strong banding mid-body to caudle fin; large individual in photo; cysts present throughout body cavity
	13-Sep-24	53	F	AEMP-FS-01-5	Metals; Protein	71	2.905	0.052	1.8	0.047	1.6	0.81	Tan colouration with limited mottling; small individual in photo in MS222; two cysts on egg sacs.
	13-Sep-24	54	M	AEMP-FS-01-6	Metals; Protein	60	1.642	0.032	1.9	0.021	1.3	0.76	

Physical Parameters of Slimy Sculpin collected from Bosworth Creek in 2024

Project Number: 417085-54419

	Collection Date	Fish #	Sex	Lab Sample ID	Analysis Type[1]	Total Length	Weight	Liver Weight	Hepatosomatic Index (HSI)	Gonad Weight	Gonadosomatic Index (GSI)	Fulton's Condition Factor	Comments/Pathology Notes
	(d/m/yr)					*(mm)*	*(g)*	*(g)*		*(g)*			
	13-Sep-24	55	F		PAHs	59	1.573	0.025	1.6	0.010	0.6	0.77	Similar features as previous male/female fish. Immaturity confirmed statistically, removed from health metric analysis.
	13-Sep-24	56	M		PAHs	57	1.462	0.019	1.3	0.036	2.5	0.79	
	13-Sep-24	57	M		PAHs	56	1.511	0.017	1.1	0.024	1.6	0.86	
	13-Sep-24	58	M		PAHs	59	1.294	0.014	1.1	0.007	0.5	0.63	Cysts on stomach. Immaturity confirmed statistically, removed from health metric analysis.
	13-Sep-24	59	F		PAHs	57	1.268	0.020	1.6	0.021	1.7	0.68	
	13-Sep-24	60	F	AEMP-FS-01-7	---	75	4.425	0.047	1.1	0.024	0.5	1.05	Underdeveloped; no egg production; clear ovaries; 3 parasites.
	13-Sep-24	61	F		PAHs	55	1.376	0.019	1.4	0.017	1.2	0.83	
	13-Sep-24	62			PAHs	50	1.005	0.018	1.8	0.010	1.0	0.80	underdeveloped, no eggs in ovaries; 2 parasites, not included in PAH sample bag. Not included in health metric analysis due to potenitial parasite influence.
	14-Sep-24	63	F	AEMP-FS-01-8	Metals; Protein	60	1.833	0	3.1	0.037	2.0	0.85	
	14-Sep-24	64	M	AEMP-FS-01-9	Metals; Protein	77	3.855	0	2.4	0.088	2.3	0.84	
	14-Sep-24	65	F	AEMP-FS-01-10	Metals; Protein	75	3.645	0.110	3.0	0.058	1.6	0.86	
	14-Sep-24	66	U	AEMP-FS-01-11	---	73	3.472	0.060	1.7	0.021	0.6	0.89	Under developed gonads. Suspected female based on clear gonad lobes. 5 mm x 3 mm pocket of dense cysts found between gonads. Removed from health metrics analysis due to potential parasite influence.
	14-Sep-24	67	M		PAHs	62	1.998	0.036	1.8	0.035	1.8	0.84	
	14-Sep-24	68	F	AEMP-FS-01-12	---	67	2.447	0.075	3.1	0.042	1.7	0.81	Milky white and consolidated white structure found in body cavity.
	14-Sep-24	69	M		PAHs	60	1.819	0.022	1.2	0.045	2.5	0.84	
	14-Sep-24	70	F	AEMP-FS-01-13	---	60	1.648	0.045	2.7	0.019	1.2	0.76	
	14-Sep-24	71	M		PAHs	60	1.749	0.019	1.1	0.043	2.5	0.81	
	14-Sep-24	72	F	AEMP-FS-01-14	Metals; Protein	76	3.715	0.070	1.9	0.032	0.9	0.85	
	14-Sep-24	73	F	AEMP-FS-01-15	Metals; Protein	70	2.813	0.078	2.8	0.054	1.9	0.82	
	14-Sep-24	74	F	AEMP-FS-01-16	---	75	3.446	0.080	2.3	0.071	2.1	0.82	
	14-Sep-24	75	F	AEMP-FS-01-17	Metals; Protein	75	3.236	0.079	2.4	0.062	1.9	0.77	
	14-Sep-24	76	M	AEMP-FS-01-18	Metals; Protein	65	2.223	0.035	1.6	0.031	1.4	0.81	
	14-Sep-24	77	F	AEMP-FS-01-19	Metals; Protein	91	4.459	0.100	2.2	0.068	1.5	0.59	
	14-Sep-24	78	M	AEMP-FS-01-20	Metals; Protein	62	2.055	0.025	1.2	0.031	1.5	0.86	
	14-Sep-24	79	M	AEMP-FS-01-21	Metals; Protein	60	1.910	0.033	1.7	0.017	0.9	0.88	
	14-Sep-24	80	F		PAHs	57	1.362	0.020	1.5	0.020	1.5	0.74	
	14-Sep-24	81	F	AEMP-FS-01-22	Metals; Protein	78	2.545	0.062	2.4	0.028	1.1	0.54	
	14-Sep-24	82	M	AEMP-FS-01-23	---	65	2.332	0.021	0.9	0.036	1.5	0.85	
	14-Sep-24	83	M	AEMP-FS-01-24	---	59	1.567	0.030	1.9	0.031	2.0	0.76	
	14-Sep-24	84	M	AEMP-FS-01-25	Metals; Protein	58	1.645	0.038	2.3	0.027	1.6	0.84	
	14-Sep-24	85	M	AEMP-FS-01-26	---	62	1.881	0.020	1.1	0.045	2.4	0.79	
	14-Sep-24	86	M		PAHs	57	1.329	0.029	2.2	0.001	0.1	0.72	Immaturity confirmed statistically, removed from health metric analysis.
	14-Sep-24	87	F		PAHs	65	2.250	0.040	1.8	0.015	0.7	0.82	
	14-Sep-24	88	M	AEMP-FS-01-27	---	59	1.564	0.033	2.1	0.027	1.7	0.76	
	14-Sep-24	89	F		PAHs	55	1.413	0.014	1.0	0.018	1.3	0.85	

Table 8

Physical Parameters of Slimy Sculpin collected from Bosworth Creek in 2024

Project Number: 417085-54419

	Collection Date	Fish #	Sex	Lab Sample ID	Analysis Type[1]	Total Length	Weight	Liver Weight	Hepatosomatic Index (HSI)	Gonad Weight	Gonadosomatic Index (GSI)	Fulton's Condition Factor	Comments/Pathology Notes
	(d/m/yr)					*(mm)*	*(g)*	*(g)*		*(g)*			
	14-Sep-24	90	U		PAHs	61	1.806	0.023	1.3	0.010	0.6	0.80	Immaturity confirmed statistically, removed from health metric analysis.
	14-Sep-24	91	M		PAHs	56	1.355	0.026	1.9	0.000	0.0	0.77	Immaturity confirmed statistically, removed from health metric analvsis.
	14-Sep-24	92	F		PAHs	55	1.360	0.030	2.2	0.016	1.2	0.82	
	14-Sep-24	93	F		PAHs	58	1.423	0.036	2.5	0.015	1.1	0.73	
	17-Sep-24	152	M	AEMP-FS-01-28	Metals; Protein	70	2.996	0.044	1.5	0.052	1.7	0.87	
	17-Sep-24	153	F	AEMP-FS-01-30	Metals; Protein	93	5.711	0.148	2.6	0.100	1.8	0.71	
	17-Sep-24	154	F	AEMP-FS-01-29	Metals; Protein	70	2.920	0.123	4.2	0.055	1.9	0.85	Note: high HSI
	17-Sep-24	155	F		PAHs	88	5.398	0.104	1.9	0.087	1.6	0.79	
	17-Sep-24	156	F		PAHs	66	2.339	0.075	3.2	0.057	2.4	0.81	
	17-Sep-24	157	F		PAHs	65	2.088	0.054	2.6	0.037	1.8	0.76	
	Average					66	2.411	0.048	1.9	0.037	1.5	0.80	

Notes:

1. --- indicates parameter not analysed.
2. Protein analysis includes measurement of CYP1A protein and total protein content in the liver of individual fish, metals were analyzed in whole body samples submitted individually to the laboratory, and polycyclic aromatic hydrocarbons (PAHs) were analyzed as whole body composite samples.
3. Sample ID - Refers to the laboratory analysis identifier used for each sample during chemical analysis.

Table 9

Summary Statistics for Fish Health Metrics Measured in Bosworth Creek Slimy Sculpin in 2024

Project #: 417085-54419

Monitoring Station	Parameter	Units	Basic Analysis							
			Count	Min (units)	Median (units)	Max (units)	Range (units)	Average (units)	Standard Deviation (units)	Standard Error (units)
AEMP-FS-01										
Female	Length	mm	26	55	67	93	38	68.5	11.0	2.1
	Historical Range (2023)		*31*	*48*	*61*	*83*	*35*	*62.2*	*8.3*	*1.5*
	Weight	g	26	1.268	2.393	5.711	4.443	2.679	1.268	0.249
	Historical Range (2023)		*31*	*0.893*	*1.798*	*4.628*	*3.735*	*2.071*	*0.943*	*0.169*
	Liver Weight	g	26	0.014	0.055	0.148	0.134	0.062	0.035	0.007
	Historical Range (2023)		*31*	*0.013*	*0.038*	*0.119*	*0.106*	*0.046*	*0.027*	*0.005*
	Gonad Weight	g	26	0.015	0.035	0.100	0.085	0.040	0.024	0.005
	Historical Range (2023)		*31*	*0.005*	*0.032*	*0.092*	*0.087*	*0.035*	*0.021*	*0.004*
	Condition	---	26	0.54	0.81	1.05	0.51	0.79	0.09	0.02
	Historical Range (2023)		*31*	*0.64*	*0.83*	*0.92*	*0.28*	*0.82*	*0.08*	*0.01*
	Hepatosomatic Index (HSI)	---	26	0.99	2.31	4.21	3.22	2.27	0.74	0.14
	Historical Range (2023)		*31*	*1.06*	*2.03*	*3.47*	*2.41*	*2.20*	*0.65*	*0.12*
	Gonadosomatic Index (GSI)	---	26	0.54	1.56	2.44	1.89	1.48	0.45	0.09
	Historical Range (2023)		*31*	*0.24*	*1.81*	*2.34*	*2.10*	*1.63*	*0.53*	*0.09*
	CYP1A Protein Content	pg/mg protein	10	8.94	12.78	20.76	11.82	13.48	3.41	1.08
	Historical Range (2023)		*9*	*12.3*	*15.28*	*21.3*	*9.00*	*15.55*	*2.61*	*0.87*
	Total Protein Content	µg/mL	10	5530	7232	7995	2465	7001	717	227
	Historical Range (2023)		*9*	*3707*	*5561*	*7253*	*3546*	*5695*	*1125*	*375*
Male	Length	mm	19	56	62	90	34	64.2	8.2	1.9
	Historical Range (2023)		*11*	*48*	*61*	*90*	*42*	*64.7*	*11.9*	*3.6*
	Weight	g	19	1.462	1.910	6.073	4.611	2.309	1.110	0.255
	Historical Range (2023)		*11*	*0.809*	*1.904*	*7.300*	*6.491*	*2.569*	*1.878*	*0.566*
	Liver Weight	g	19	0.017	0.033	0.096	0.079	0.037	0.023	0.005
	Historical Range (2023)		*11*	*0.010*	*0.026*	*0.089*	*0.079*	*0.034*	*0.025*	*0.008*
	Gonad Weight	g	19	0.017	0.036	0.115	0.098	0.043	0.024	0.005
	Historical Range (2023)		*11*	*0.002*	*0.022*	*0.089*	*0.087*	*0.033*	*0.025*	*0.008*
	Condition	---	19	0.76	0.84	0.88	0.12	0.83	0.04	0.01
	Historical Range (2023)		*11*	*0.60*	*0.84*	*1.02*	*0.42*	*0.82*	*0.13*	*0.04*

Table 9

Summary Statistics for Fish Health Metrics Measured in Bosworth Creek Slimy Sculpin in 2024

Project #: 417085-54419

Monitoring Station	Parameter	Units	Basic Analysis							
			Count	Min (units)	Median (units)	Max (units)	Range (units)	Average (units)	Standard Deviation (units)	Standard Error (units)
	Hepatosomatic Index (HSI)	---	19	0.90	1.57	2.44	1.54	1.58	0.44	0.10
	Historical Range (2023)		*11*	*0.81*	*1.36*	*1.70*	*0.89*	*1.30*	*0.28*	*0.09*
	Gonadosomatic Index (GSI)	---	19	0.89	1.75	2.47	1.58	1.83	0.44	0.10
	Historical Range (2023)		*11*	*0.12*	*1.80*	*2.46*	*2.34*	*1.56*	*0.86*	*0.26*
	CYP1A Protein Content	pg/mg protein	10	8.50	10.15	13.17	4.68	10.64	1.61	0.51
	Historical Range (2023)		*9*	*6.63*	*10.27*	*17.33*	*10.70*	*10.33*	*3.22*	*1.07*
	Total Protein Content	µg/mL	10	4671	7250	7987	3316	7042	935	296
	Historical Range (2023)		*9*	*5160*	*7697*	*14638*	*9478*	*8631*	*3108*	*1036*
AEMP-FS-02										
Female	Length	mm	24	58	65	87	29	67.04	8.6	1.8
	Historical Range (2023)		*14*	*51*	*64*	*105*	*54*	*69.2*	*15.5*	*4.1*
	Weight	g	24	1.400	2.332	5.883	4.483	2.634	1.166	0.238
	Historical Range (2023)		*14*	*1.091*	*2.100*	*10.181*	*9.090*	*3.329*	*2.505*	*0.669*
	Liver Weight	g	24	0.028	0.060	0.196	0.168	0.069	0.039	0.008
	Historical Range (2023)		*14*	*0.015*	*0.046*	*0.293*	*0.278*	*0.093*	*0.085*	*0.023*
	Gonad Weight	g	24	0.017	0.033	0.099	0.082	0.041	0.024	0.005
	Historical Range (2023)		*14*	*0.005*	*0.040*	*0.231*	*0.226*	*0.065*	*0.064*	*0.017*
	Condition	---	24	0.72	0.80	1.22	0.51	0.83	0.10	0.02
	Historical Range (2023)		*14*	*0.71*	*0.88*	*1.03*	*0.32*	*0.87*	*0.08*	*0.02*
	Hepatosomatic Index (HSI)	---	24	1.36	2.71	3.73	2.37	2.57	0.69	0.14
	Historical Range (2023)		*14*	*1.09*	*2.74*	*3.63*	*2.54*	*2.49*	*0.86*	*0.23*
	Gonadosomatic Index (GSI)	---	24	0.83	1.50	2.13	1.29	1.51	0.34	0.07
	Historical Range (2023)		*14*	*0.36*	*1.61*	*2.88*	*2.52*	*1.65*	*0.71*	*0.19*
	CYP1A Protein Content	pg/mg protein	10	12.19	15.16	27.55	15.36	16.23	4.44	1.40
	Historical Range (2023)		*10*	*13.03*	*17.14*	*20.92*	*7.89*	*16.63*	*2.48*	*0.78*
	Total Protein Content	µg/mL	10	4465	5860	6635	2170	5785	632	200
	Historical Range (2023)		*10*	*4786*	*5642*	*8832*	*4046*	*5976*	*1246*	*394*
Male	Length	mm	21	55	68	99	44	70.0	10.6	2.3
	Historical Range (2023)		*14*	*50*	*62*	*81*	*31*	*62.5*	*9.2*	*2.5*

Table 9

Summary Statistics for Fish Health Metrics Measured in Bosworth Creek Slimy Sculpin in 2024

Project #: 417085-54419

Monitoring Station	Parameter	Units	Basic Analysis							
			Count	Min (units)	Median (units)	Max (units)	Range (units)	Average (units)	Standard Deviation (units)	Standard Error (units)
	Weight	g	21	1.444	2.671	8.279	6.835	3.248	1.665	0.363
	Historical Range (2023)		*14*	*0.923*	*1.939*	*5.192*	*4.269*	*2.320*	*1.240*	*0.331*
	Liver Weight	g	21	0.014	0.055	0.362	0.348	0.075	0.073	0.016
	Historical Range (2023)		*14*	*0.002*	*0.037*	*0.107*	*0.105*	*0.043*	*0.032*	*0.008*
	Gonad Weight	g	21	0.026	0.055	0.178	0.152	0.068	0.041	0.009
	Historical Range (2023)		*13*	*0.005*	*0.039*	*0.097*	*0.092*	*0.044*	*0.031*	*0.009*
	Condition	---	21	0.77	0.87	0.98	0.21	0.88	0.05	0.01
	Historical Range (2023)		*14*	*0.72*	*0.83*	*1.10*	*0.38*	*0.88*	*0.13*	*0.03*
	Hepatosomatic Index (HSI)	---	21	0.83	2.03	4.37	3.55	2.07	0.74	0.16
	Historical Range (2023)		*14*	*0.22*	*1.66*	*2.63*	*2.41*	*1.68*	*0.72*	*0.19*
	Gonadosomatic Index (GSI)	---	21	1.53	1.92	2.70	1.17	2.04	0.36	0.08
	Historical Range (2023)		*13*	*0.23*	*1.94*	*5.69*	*5.46*	*2.03*	*1.33*	*0.37*
	CYP1A Protein Content	pg/mg protein	10	10.87	13.09	17.95	7.08	13.65	2.43	0.77
	Historical Range (2023)		*7*	*8.261*	*13.48*	*24.876*	*16.62*	*15.67*	*6.76*	*2.56*
	Total Protein Content	µg/mL	10	4655	6529	7500	2845	6382	901	285
	Historical Range (2023)		*7*	*4333*	*6591*	*10152*	*5819*	*6847*	*2436*	*921*
AEMP-FS-03										
Female	Length	mm	29	56	70	93	37	71.9	10.64	1.98
	Weight	g	29	1.49	2.872	5.792	4.302	3.178	1.332	0.247
	Liver Weight	g	29	0.021	0.068	0.152	0.131	0.071	0.037	0.007
	Gonad Weight	g	29	0.02	0.044	0.122	0.102	0.054	0.029	0.005
	Condition	---	29	0.65	0.82	0.90	0.25	0.81	0.06	0.01
	Hepatosomatic Index (HSI)	---	29	1.12	2.20	3.11	1.99	2.17	0.51	0.10
	Gonadosomatic Index (GSI)	---	29	0.81	1.64	2.87	2.06	1.67	0.43	0.08
	CYP1A Protein Content	pg/mg protein	10	13.02	15.78	18.14	5.12	15.70	1.83	0.58
	Total Protein Content	µg/mL	10	5355	6361	7254	1899	6426	642	203
Male	Length	mm	15	55	60	85	30	63.3	8.5	2.2
	Weight	g	15	1.125	1.626	5.113	3.988	2.186	1.162	0.300

Table 9

Summary Statistics for Fish Health Metrics Measured in Bosworth Creek Slimy Sculpin in 2024

Project #: 417085-54419

Monitoring Station	Parameter	Units	Basic Analysis							
			Count	Min (units)	Median (units)	Max (units)	Range (units)	Average (units)	Standard Deviation (units)	Standard Error (units)
	Liver Weight	g	15	0.006	0.028	0.085	0.079	0.034	0.025	0.006
	Gonad Weight	g	15	0.008	0.031	0.099	0.091	0.043	0.030	0.008
	Condition	---	15	0.52	0.83	0.99	0.47	0.80	0.12	0.03
	Hepatosomatic Index (HSI)	---	15	0.42	1.43	2.49	2.06	1.50	0.55	0.14
	Gonadosomatic Index (GSI)	---	15	0.64	1.91	2.58	1.95	1.83	0.52	0.13
	CYP1A Protein Content	pg/mg protein	8	9.04	11.53	15.39	6.36	12.13	2.18	0.77
	Total Protein Content	µg/mL	8	6531	7535	8205	1674	7333	616	218

Notes:

Table 10

Statistical Comparison Summary for Bosworth Creek Slimy Sculpin Health Metrics in 2024

Project #: 417085-54419

		Parametric (ANOVA/ANCOVA) Analysis								Linear Reggression Statistics										Permutation Analysis	
	Parameter	Degrees of Freedom (k-1) (k-1)	Degrees of Freedom (n-1) (n-1)	F-Statistic (Site Parameter)	Site Parameter Significance p-value	Percent Difference (%)	Power[1] 1-β	Transformation/Violoation	Tukey Pairwise Comparisons p-value	y-Intercept parameter (β_0)	Covariate Effect Parameter (β_1)	Covariate Significance (β_1) p-value	Site Effect Parameter (β_2)	Site Effect Significance (β_2) p-value	Covariate:Site Interaction Effect Parameter (β_3)	Site Interaction Significance p-value	r^2 Adjusted R-Square	Residual Standard Error	Z- Statistic	p-value
2024 One-way Analysis of Variance (ANOVA)																					
Female	Length	2	76	1.60	0.208	FS-02:FS-01 = -2.1 FS-02:FS-03 = -6.8 FS-03:FS-01 = 5.0	0.34	Normality[3]	---	---	---	---	---	---	---	---	---	---	3.18	0.206
	Weight	2	76	1.73	0.185	FS-02:FS-01 = -1.7 FS-02:FS-03 = -17.1 FS-03:FS-01 = 18.6	0.36	Normality[3]	---	---	---	---	---	---	---	---	---	---	3.09	0.215
	Condition	2	76	1.87	0.161	FS-02:FS-01 = 5.5 FS-02:FS-03 = 2.1 FS-03:FS-01 = 3.3	---	Normality and variance	---	---	---	---	---	---	---	---	---	---	3.25	0.200
	Hepatosomatic Index (HSI)	2	76	2.64	0.078	FS-02:FS-01 = 12.9 FS-02:FS-03 = 18.5 FS-03:FS-01 = -4.7	0.53	None	---	---	---	---	---	---	---	---	---	---	---	---
	Gonadosomatic Index (GSI)	2	76	1.64	0.201	FS-02:FS-01 = 2.0 FS-02:FS-03 = -9.4 FS-03:FS-01 =12.6	0.35	None	---	---	---	---	---	---	---	---	---	---	---	---
	CYP1A Protein Content	2	27	2.50	0.101	FS-02:FS-01 = 20.4 FS-02:FS-03 = 3.4 FS-03:FS-01 = 16.4	0.50	Log10	---	---	---	---	---	---	---	---	---	---	---	---
	Total Protein Content	2	27	8.38	**0.001**	FS-02:FS-01 = -17.4 FS-02:FS-03 = -10 FS-03:FS-01 = -8.2	0.96	None	**FS-02:FS-01 = 0.001** FS-02:FS-03 = 0.097 FS-03:FS-01 = 0.149	---	---	---	---	---	---	---	---	---	---	---	---
Male	Length	2	52	3.15	0.051	FS-02:FS-01 = 9.1 FS-02:FS-03 = 10.6 FS-03:FS-01 = -1.4	---	Normality	---	---	---	---	---	---	---	---	---	---	5.51	0.059
	Weight	2	52	4.55	**0.015**	FS-02:FS-01 = 40.7 FS-02:FS-03 = 48.6 FS-03:FS-01 = -5.3	0.77	Normality[3]	FS-02:FS-01 = 0.061 **FS-02:FS-03 = 0.021** FS-03:FS-01 = 0.836	---	---	---	---	---	---	---	---	---	---	6.38	**0.034**
	Condition	2	52	5.33	**0.008**	FS-02:FS-01 = 6.4 FS-02:FS-03 = 9.6 FS-03:FS-01 = -1.7	0.84	Square	**FS-02:FS-01 = 0.045** **FS-02:FS-03 = 0.011** FS-03:FS-01 = 0.763	---	---	---	---	---	---	---	---	---	---	---	---
	Hepatosomatic Index (HSI)	2	51	4.08	**0.023**	**FS-02:FS-01 = 30.5** **FS-02:FS-03 = 37.6** FS-03:FS-01 = -5.2	0.73	None[2]	FS-02:FS-01 = 0.072 **FS-02:FS-03 = 0.033** FS-03:FS-01 = 0.887	---	---	---	---	---	---	---	---	---	---	---	---
	Gonadosomatic Index (GSI)	2	52	1.49	0.236	FS-02:FS-01 = 11.3 FS-02:FS-03 = 11.5 FS-03:FS-01 = -8.7	0.25	None	---	---	---	---	---	---	---	---	---	---	---	---

Table 10

Statistical Comparison Summary for Bosworth Creek Slimy Sculpin Health Metrics in 2024

Project #: 417085-54419

	Parametric (ANOVA/ANCOVA) Analysis								Linear Reggression Statistics									Permutation Analysis	
Parameter	Degrees of Freedom (k-1)	Degrees of Freedom (n-1)	F-Statistic (Site Parameter)	Site Parameter Significance p-value	Percent Difference (%)	Power[1] 1-β	Transformation/Violoation	Tukey Pairwise Comparisons p-value	y-Intercept parameter (β_0)	Covariate Effect Parameter (β_1)	Covariate Significance (β_1) p-value	Site Effect Parameter (β_2)	Site Effect Significance (β_2) p-value	Covariate:Site Interaction Effect Parameter (β_3)	Site Interaction Significance p-value	r^2-Adjusted R-Square	Residual Standard Error	Z- Statistic	p-value
CYP1A Protein Content	2	25	5.16	**0.013**	FS-02:FS-01 = 28.3 FS-02:FS-03 = 12.6 FS-03:FS-01 = 13.9	0.82	None	**FS-02:FS-01 = 0.010** FS-02:FS-03 = 0.292 FS-03:FS-01 = 0.312	---	---	---	---	---	---	---	---	---	---	---
Total Protein Content	2	25	3.34	0.052	FS-02:FS-01 = -9.4 FS-02:FS-03 = -13.0 FS-03:FS-01 = 4.1	0.63	Square	---	---	---	---	---	---	---	---	---	---	---	---
2024 Analysis of Covariance (ANCOVA)																			
Female Body Weight (Length Covariate)	2	75	1.91	0.155	FS-02:FS-01 = 5.4 FS-02:FS-03 = 1.1 FS-03:FS-01 = 4.3	0.40	Log10	---	-4.927	2.901	**<2E-16**	FS-02 =0.023 FS-03 =0.018	FS-02 = 0.072 FS-03 = 0.135	---	---	0.94	0.045	---	---
Liver Weight (Body Weight Covariate)	2	75	2.77	0.069	FS-02:FS-01 = 14.8 FS-02:FS-03 = 20.5 FS-03:FS-01 =-4.8	0.55	Log10	---	-1.720	1.138	**<2E-16**	FS-02 =0.060 FS-03 =-0.021	FS-02 = 0.099 FS-03 = 0.544	---	---	**0.73**	0.127	---	---
Gonad Weight (Body Weight Covariate)	2	75	1.23	0.299	FS-02:FS-01 = 4.8 FS-02:FS-03 = -7.3 FS-03:FS-01 =13.0	0.27	Log10	**---**	-1.887	1.091	**<2E-16**	FS-02 =0.020 FS-03 =0.053	FS-02 =0.566 FS-03 =0.125	---	---	**0.74**	0.125	---	---
Male Body Weight (Length Covariate)	2	51	3.26	**0.046**	FS-02:FS-01 = 5.2 FS-02:FS-03 = 8.3 FS-03:FS-01 = -2.8	0.63	Log10	FS-02:FS-01 = 0.374 **FS-02:FS-03 = 0.051** FS-03:FS-01 = 0.507	-5.397	3.174	**<2E-16**	FS-02 = 0.020 FS-03 = -0.016	FS-02 = 0.136 FS-03 = 0.254	---	---	0.96	0.041	---	---
Liver Weight (Body Weight Covariate)	2	50	1.65	0.202	FS-02:FS-01 = 14.8 FS-02:FS-03 = 23.6 FS-03:FS-01 = -7.1	0.36	Log10	---	-1.902	1.258	**7.88E-15**	FS-02 = 0.060 FS-03 = -0.032	FS-02 = 0.216 FS-03 = 0.523	---	---	**0.74**	0.144	---	---
Gonad Weight (Body Weight Covariate)	2	51	0.41	0.669	FS-02:FS-01 = 6.8 FS-02:FS-03 = 7.4 FS-03:FS-01 = -0.6	0.12	Log10	---	-1.811	1.182	**<2E-16**	FS-02 = 0.028 FS-03 = -0.002	FS-02 = 0.438 FS-03 = 0.948	---	---	0.82	0.109	---	---

Notes: 1. Superscript 1 - Effect size for ANOVA and ANCOVA power analysis is based on partial Eta.

2. Superscript 2 - Outlier with tumor growth on liver removed from statistical analysis

3. Superscript 3 - Assumptions of ANOVA violated based on formal test but meet general requirements based on robustness of ANOVA analysis and residual plot review, results confirmed by permutation analysis.

X 3. Yellow highlighting denotes p-values below the chosen cutoff of α=0.05 and denotes a significant difference for the associated comparison

X 4. Blue highlighting denotes percent difference values that exceed the associated critical effect size (CES) which includes: Condition = 10%, HSI/GSI = 25%

X 5. Green highlighting denotes p-values below the chosen cutoff of α = 0.05 for covariate regression analyses. Lower values indicate stronger relationship between covariates and improved site comparison confidence.

X 6. R-square equals the cutoff of 0.80 that is preferable for robust site comparisons for ANCOVA analysis (Environment Canada 2012)

X 7. R-square is below the cutoff of 0.80 that is preferred for robust site comparisons for ANCOVA analyses (Environment Canada 2012)

8. ANCOVA analysis with no significant terms are presented with site comparisons with no interaction term to show site differences

Table 11

Whole Body Tissue Residue Analytical Results: Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Name	% Moisture %	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Lithium (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Phosphorus (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Strontium (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Titanium (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Federal Environmental Quality Guidelines [#1]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**6.7**	---	---	---	---	---	---	---	---	---
BOSWORTH CREEK																																	
Females																																	
NW AEMP Lower Control Limit			---	**<0.052**	---	---	**<0.001**	---	---	---	**0.53**	---	**0.88**	---	---	---	---	---	---	**<0.001**	**<0.029**	---	---	**2.42**	---	---	---	---	---	---	---	---	---	**18**
NW AEMP Upper Control Limit			---	**14.6**	---	---	**1.148**	---	---	---	**1.23**	---	**2.38**	---	---	---	---	---	---	**0.07**	**2.994**	---	---	**5.57**	---	---	---	---	---	---	---	---	---	**82**
AEMP-FS-01	23-Oct-2023	AEMP-01-FS-01	78.4	4.3	< 0.007	< 0.837	0.475	0.064	0.034	1569	0.64	0.07	1.5	36	0.012	0.017	1069	1.8	1.2	0.019	0.324	10452	17794	3.2	< 0.003	4650	2.5	0.017	0.546	1.2	< 0.003	0.043	55
	23-Oct-2023	AEMP-01-FS-02	77.8	2.7	< 0.007	< 0.837	0.29	< 0.207	< 0.1	1352	0.576	0.049	1.2	25	0.007	0.011	1106	2.4	1	0.009	0.233	8895	13548	3.3	< 0.003	3486	2.1	0.022	0.412	0.952	< 0.003	< 0.113	43
	23-Oct-2023	AEMP-01-FS-13	78.8	2.5	< 0.007	0.656	0.36	0.104	< 0.1	1524	0.623	0.043	1.2	27	0.005	0.021	1112	2	0.991	0.012	0.379	8878	15627	4.4	< 0.003	3881	2.3	0.042	0.234	0.958	< 0.003	0.042	39
	23-Oct-2023	AEMP-01-FS-14	74.6	6.8	< 0.007	< 0.837	0.693	0.104	0.037	1667	0.647	0.077	1.9	36	0.013	0.021	1122	5.9	0.946	0.024	0.535	8721	14752	5.4	< 0.003	3122	2.8	0.033	0.267	1	< 0.003	0.046	64
	23-Oct-2023	AEMP-01-FS-03	78.2	3.9	< 0.007	0.351	0.343	< 0.207	0.034	1561	0.758	0.112	1.5	32	0.014	0.017	1071	2	0.913	0.019	1	8979	12680	5.1	< 0.003	3827	2.2	0.024	0.836	1.2	< 0.003	0.043	41
	23-Oct-2023	AEMP-01-FS-05	78	4.3	< 0.007	< 0.837	0.29	0.064	< 0.1	1589	0.637	0.068	1.5	30	0.012	0.014	862	1.6	0.741	0.019	0.467	9394	14433	6.4	< 0.003	3516	2.3	0.038	0.692	1.1	< 0.003	< 0.113	50
	23-Oct-2023	AEMP-01-FS-06	77.3	2.2	< 0.007	< 0.837	0.435	0.064	< 0.1	1364	0.622	0.052	1.2	26	0.007	0.017	890	1.4	0.997	0.009	0.348	9830	17156	5.5	< 0.003	4093	1.9	0.017	0.312	1.2	< 0.003	< 0.113	56
	23-Oct-2023	AEMP-01-FS-08	77.2	1.8	< 0.007	< 0.837	0.211	0.064	< 0.1	1493	0.598	0.04	1.8	30	0.005	0.017	1097	1.9	0.724	0.009	0.238	10768	18865	4.5	< 0.003	3795	2.2	0.026	0.332	1	< 0.003	< 0.113	36
	23-Oct-2023	AEMP-01-FS-09	74.8	1.6	< 0.007	< 0.837	0.659	0.073	< 0.1	1650	0.74	0.057	1.7	38	0.007	0.014	1120	3.1	0.623	0.019	0.823	8286	10958	5.1	< 0.003	3209	3.4	0.027	0.847	1.1	< 0.003	< 0.113	34
	23-Oct-2023	AEMP-01-FS-10	78.5	1.6	< 0.007	< 0.837	0.237	0.092	< 0.1	1384	0.589	0.032	1.2	32	0.007	0.014	917	1.9	0.701	0.009	0.524	7234	12682	5.7	< 0.003	2930	1.7	0.023	0.309	0.952	< 0.003	< 0.113	47
	25-Sep-2024	AEMP-FS-01-5	76.4	2.7	0.004	0.269	0.391	< 0.114	< 0.049	1364	0.972	0.069	1.5	34	0.006	< 0.034	1326	1.5	0.806	0.019	1.2	8464	15267	3.7	< 0.001	2250	2.3	0.022	0.189	1.1	< 0.001	0.05	54
	25-Sep-2024	AEMP-FS-01-8	75.7	5.2	< 0.003	0.267	0.609	0.138	< 0.049	1680	1.2	0.082	1.5	37	0.014	< 0.034	1238	1.6	0.642	0.047	2.2	8543	14641	5.7	< 0.001	3549	3.2	0.018	0.673	1	< 0.001	0.059	46
	25-Sep-2024	AEMP-FS-01-10	77.2	17	< 0.003	< 0.215	0.554	0.152	< 0.049	1425	0.811	0.11	1.6	45	0.017	0.046	1256	2.4	0.388	0.071	0.914	8012	12276	4.7	< 0.001	2804	2.4	0.028	0.245	1.7	0.001	0.092	37
	25-Sep-2024	AEMP-FS-01-14	78.7	4.8	0.007	0.331	0.443	0.124	0.062	1519	0.742	0.094	1.5	34	0.014	0.05	1280	2.1	1.5	0.024	0.676	9683	15778	4.1	< 0.001	3795	2.2	0.028	0.509	1.8	0.002	0.094	60
	25-Sep-2024	AEMP-FS-01-15	78.7	5.6	< 0.003	< 0.215	0.351	< 0.114	< 0.049	1595	0.715	0.057	1.9	34	0.01	0.037	1272	2	0.905	0.024	0.826	7750	11911	4.2	< 0.001	2697	2.6	0.021	0.379	1.3	0.001	0.05	43
	25-Sep-2024	AEMP-FS-01-17	75.5	5.5	0.004	0.305	0.83	0.138	< 0.049	1546	1	0.114	1.9	40	0.027	< 0.034	1208	2.6	0.975	0.024	1.3	9217	15022	4.7	< 0.001	2972	3.3	0.02	0.397	1.6	0.001	0.08	57
	25-Sep-2024	AEMP-FS-01-19	79	7.8	0.014	0.382	0.848	0.2	0.124	1552	0.939	0.129	2.4	55	0.03	0.064	1304	2.8	1.2	0.047	1.3	10278	15381	4	0.016	3840	2.8	0.031	0.345	1.6	0.003	0.101	74
	25-Sep-2024	AEMP-FS-01-22	73.7	3.6	0.004	< 0.215	0.258	< 0.114	< 0.049	1407	1	0.065	1.7	34	0.01	< 0.034	1162	1.3	0.647	0.024	1.3	7754	12174	5	< 0.001	2284	2.3	0.018	0.311	1	< 0.001	0.059	37
	25-Sep-2024	AEMP-FS-01-29	78.3	18	0.006	0.356	0.683	0.138	< 0.049	1512	1.1	0.114	2.4	58	0.017	0.055	1319	2.3	0.925	0.047	1.4	11308	22015	4.9	< 0.001	3835	2.8	0.029	0.35	1.8	0.002	0.142	79
	25-Sep-2024	AEMP-FS-01-30	77.8	5.3	0.005	< 0.215	0.627	< 0.114	0.062	1609	0.763	0.078	2	44	0.015	< 0.034	1410	2.3	2.1	0.024	0.638	10414	14628	4	< 0.001	3617	2.7	0.031	0.226	1.6	0.001	0.088	72
AEMP-FS-02	23-Oct-2023	AEMP-02-FS-01	79.5	2.5	< 0.007	< 0.837	0.277	0.062	0.037	1534	0.577	0.073	1.2	25	0.01	0.021	1063	1.2	1.4	0.012	0.49	10284	13230	3.6	< 0.003	3823	2.9	0.031	0.461	0.851	< 0.003	0.052	53
	23-Oct-2023	AEMP-02-FS-04	78.6	2	< 0.007	0.298	0.333	< 0.207	< 0.1	1243	0.546	0.035	1.2	24	0.005	0.014	698	1.2	0.907	0.012	0.178	8217	17383	4.7	< 0.003	4616	1.8	0.02	0.621	0.851	< 0.003	< 0.113	50
	23-Oct-2023	AEMP-02-FS-07	78.8	3.3	< 0.007	< 0.837	0.43	< 0.207	< 0.1	1405	0.66	0.041	1.4	29	< 0.013	0.013	925	1.7	1.3	0.012	0.55	8611	12313	3.4	< 0.003	3140	2.1	0.041	0.744	1.1	< 0.003	0.046	39
	23-Oct-2023	AEMP-02-FS-08	77	3.8	< 0.007	< 0.837	0.637	0.117	0.052	1716	0.736	0.163	2	34	0.011	0.029	1000	3.8	0.869	0.024	1.1	8691	12272	**9.3** [#1,2]	0.004	3950	3.1	0.037	0.643	0.982	< 0.003	0.063	59
	23-Oct-2023	AEMP-02-FS-09	79.9	1.5	< 0.007	< 0.837	0.296	0.064	< 0.1	1466	0.599	0.047	1.2	29	< 0.013	0.013	1105	1.4	1.6	0.012	0.432	8156	11937	2.7	< 0.003	3821	2.4	0.032	0.447	0.982	< 0.003	0.043	51
	23-Oct-2023	AEMP-02-FS-18	77.4	3.8	< 0.007	< 0.837	0.563	0.074	0.052	1512	0.714	0.079	1.4	33	0.006	0.016	940	2.3	1.1	0.012	0.852	7831	12545	4	< 0.003	3812	2.8	0.032	1.1	0.859	< 0.003	0.045	41
	23-Oct-2023	AEMP-02-FS-19	78.2	2.5	< 0.007	< 0.837	0.267	< 0.207	< 0.1	1267	0.571	0.054	1.1	24	0.007	0.016	865	1.6	1	0.024	0.383	8412	14254	3	< 0.003	4050	1.6	0.046	0.41	0.859	< 0.003	0.035	40
	23-Oct-2023	AEMP-02-FS-22	78	14	< 0.007	< 0.837	**1.3** [#2]	0.17	0.084	1508	0.641	0.086	1.8	65	0.028	0.034	590	2.5	0.979	0.037	1.1	12096	19745	**8.4** [#1,2]	< 0.003	5988	3.3	0.025	1.1	1.4	< 0.003	0.075	64
	23-Oct-2023	AEMP-02-FS-25	76.3	5	< 0.007	< 0.837	0.267	0.074	< 0.1	1375	0.705	0.077	1.2	41	0.011	0.016	718	2	0.534	0.037	0.964	7639	11158	4.6	< 0.003	3455	1.8	0.026	0.772	0.859	< 0.003	0.049	47
	23-Oct-2023	AEMP-02-FS-26	76.9	3.9	< 0.007	< 0.837	0.326	0.074	0.042	1478	0.749	0.075	1	28	0.011	0.016	947	3.8	0.749	0.024	1.2	8117	12388	4.3	< 0.003	3071	2.2	0.04	0.894	0.737	< 0.003	0.041	38
	25-Sep-2024	AEMP-FS-02-2	74.1	3.6	< 0.003	0.28	0.295	< 0.114	< 0.049	1222	0.739	0.055	1.8	28	0.014	< 0.034	1094	1.6	0.935	0.024	0.488	8309	14179	4.2	< 0.001	3063	2.3	0.022	0.31	1	0.001	0.054	44
	25-Sep-2024	AEMP-FS-02-4	76.9	6	< 0.003	0.273	0.762	0.126	< 0.049	1449	1	0.099	**2.4** [#2]	56	0.018	< 0.034	1285	4.9	0.47	0.024	1.7	8457	13388	5.4	< 0.001	2643	3.1	0.024	0.151	1.4	< 0.001	0.095	51
	25-Sep-2024	AEMP-FS-02-7	80.2	11	0.019	0.339	0.449	0.157	< 0.049	1560	0.8	0.168	**2.6** [#2]	53	0.022	0.055	1259	1.8	0.836	0.024	1	9588	17852	4.1	< 0.001	3368	1.7	0.039	0.32	1.5	< 0.001	0.067	**112** [#2]
	25-Sep-2024	AEMP-FS-02-8	74.8	2.1	< 0.003	< 0.215	0.314	< 0.114	< 0.049	1249	0.693	0.049	1.5	25	0.011	< 0.034	1261	1.2	0.512	< 0.001	0.474	8422	13788	3.1	< 0.001	2595	1.9	0.031	0.102	1.1	< 0.001	< 0.049	33
	25-Sep-2024	AEMP-FS-02-10	76.3	6.6	< 0.003	0.219	0.851	0.157	< 0.049	1525	0.9	0.103	1.9	33	0.015	< 0.034	1384	1.8	0.47	**0.118** [#2]	1.3	8422	12581	2.7	< 0.001	2893	2.8	0.022	0.175	1.1	< 0.001	0.069	48
	25-Sep-2024	AEMP-FS-02-12	78.5	4	0.003	0.328	0.269	< 0.114	< 0.049	1427	0.852	0.067	1.4	40	0.011	< 0.034	1316	1.3	1	0.024	0.907	8853	15895	**6.3** [#2]	< 0.001	3570	2.6	0.022	0.234	1.4	< 0.001	0.059	55
	25-Sep-2024	AEMP-FS-02-13	78	5.9	< 0.003	0.273	0.314	< 0.114	< 0.049	1387	0.725	0.067	1.6	34	0.015	< 0.034	1193	1.9	0.909	0.024	0.663	8985	17066	4.3	< 0.001	3740	2.4	0.024	0.198	1.4	< 0.001	0.076	42
	25-Sep-2024	AEMP-FS-02-20	78.5	7.7	< 0.003	0.273	0.627	0.157	< 0.049	1356	0.815	0.088	1.4	42	0.035	0.046	1174	1.2	0.522	0.047	0.812	8185	14299	**6.7** [#1,2]	< 0.001	3634	2.4	0.047	0.485	1.4	< 0.001	0.076	53
	25-Sep-2024	AEMP-FS-02-21	74.7	5.9	< 0.003	0.328	0.358	0.157	< 0.049	1345	0.768	0.117	1.4	29	0.011	< 0.034	1186	1.6	0.418	0.047	0.866	7893	13830	3.8	< 0.001	2349	2.3	0.036	0.306	1.4	< 0.001	0.076	40
	25-Sep-2024	AEMP-FS-02-22	74.6	4.2	< 0.003	< 0.215	0.784	0.157	< 0.049	1378	0.872	0.067	1.9	54	0.026	< 0.034	1256	1.3	0.418	0.024	1.2	10594	20415	3.2	< 0.001	4006	2.8	0.027	0.253	1.9	< 0.001	0.109	56
AEMP-FS-03	25-Sep-2024	AEMP-FS-03-2	77.6	4.3	0.009	< 0.215	0.381	< 0.114	< 0.049	1403	0.814	0.087	1.5	46	0.015	< 0.034	1448	2	1.4	0.036	0.941	10239	15832	3.1	< 0.001	2799	1.7	0.026	0.448	1.6	< 0.001	0.099	51
	25-Sep-2024	AEMP-FS-03-17	79.2	3.7	0.007	< 0.215	0.763	0.218	< 0.049	1626	1.1	0.125	1.8	113	0.024	0.056	1481	2.8	2.7	0.038	2.1	10920	17016	4.5	< 0.001	3865	2.4	0.033	0.632	1.8	0.002	0.08	70
	25-Sep-2024	AEMP-FS-03-20	77.9	2.2	0.004	< 0.215	0.47	0.191	< 0.049	1475	0.638	0.048	1.5	23	0.012	0.038	1498	1.8	1.1	0.019	0.424	9856	16331	3.1	< 0.001	2553	2.1	0.03	0.174	1.3	0.001	0.06	36
	25-Sep-2024	AEMP-FS-03-26	77.7	9	0.011	0.33	1.4	0.218	< 0.049	1668	0.969	0.078	1.7	53	0.018	< 0.034	1655	2.7	1.4	0.057	1.9	10510	17220	3.6	< 0.001	3014	2.1	0.045	0.383	2.2	0.002	0.16	53
	25-Sep-2024	AEMP-FS-03-3	77.7	4.1	0.011	< 0.215	0.858	0.198	0.05	1725	0.869	0.108	1.6	44	0.029	0.064	1170	2.3	0.645	0.072	1.1	9027	15311	4.5	0.005	2899	2	0.021	0.525	2.5	0.003	0.151	33
	25-Sep-2024	AEMP-FS-03-4	77.3	2.8	< 0.003	< 0.215	0.286	< 0.114	< 0.049	1360	0.824	0.054	1.3	36	0.012	< 0.034	1486	2.2	1	0.014	0.753	9101	14428	3	< 0.001	2587	1.6	0.013	0.496	1.3	< 0.001	< 0.049	32
	25-Sep-2024	AEMP-FS-03-5	77.4	3.4	0.008	< 0.215	0.603	< 0.114	< 0.049	1424	0.827	0.049	1.5	45	0.02	< 0.034	1485	2	1.2	0.014	0.345	10494	14072	3.3	< 0.001	2531	2.2	0.018	0.294	1.4	< 0.001	< 0.049	58
	25-Sep-2024	AEMP-FS-03-6	77.3	1.4	< 0.003	< 0.215	0.161	0.119	< 0.049	1492	0.722	0.057	1.1	25	0.009	< 0.034	1519	2.3	0.968	0.014	0.513	9860	14717	3.3	< 0.001	2399	1.6	0.019	0.414	1.3	< 0.001	0.084	35
	25-Sep-2024	AEMP-FS-03-8	77.8	1.2	< 0.003	< 0.215	0.127	< 0.114	< 0.049	1252	0.525	0.034	0.883	17	0.003	< 0.034	810	1.5	0.427	0.014	0.257	7563	14861	3.8	< 0.001	2204	1.3	0.014	0.449	0.893	< 0.001	< 0.049	21
	25-Sep-2024	AEMP-FS-03-13	76.7	3.5	< 0.003	< 0.215	0.487	< 0.114	< 0.049	1668	1.1	0.063	1.3	54	0.006	< 0.034	1558	2	2	0.038	1.7	9948	15933	2.7	< 0.001	3065	3.1	0.033	0.433	1.1	< 0.001	0.066	47

Table 11

Whole Body Tissue Residue Analytical Results: Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Name	% Moisture (%)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Lithium (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Phosphorus (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Strontium (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Titanium (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Federal Environmental Quality Guidelines [#1]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6.7	---	---	---	---	---	---	---	---	---	---
Males																																	
NW AEMP Lower Control Limit			---	**<0.052**	---	---	**<0.001**	---	---	---	**0.39**	---	**0.95**	---	---	---	---	---	---	**<0.001**	**<0.029**	---	---	**2.32**	---	---	---	---	---	---	---	---	---	**25**
NW AEMP Upper Control Limit			---	**16.5**	---	---	**1.83**	---	---	---	**1.37**	---	**2.73**	---	---	---	---	---	---	**0.096**	**2.994**	---	---	**7.28**	---	---	---	---	---	---	---	---	---	**95**
AEMP-FS-01	23-Oct-2023	AEMP-01-FS-15	77.9	5.7	0.002	< 0.837	0.43	0.083	< 0.1	1578	0.732	0.071	1.4	38	0.01	0.018	1142	2.3	1.6	0.024	1.1	8965	14344	4.3	< 0.003	3571	2.5	0.041	0.949	0.958	< 0.003	0.051	83
	23-Oct-2023	AEMP-01-FS-16	72.8	10	0.005	0.308	0.721	0.094	0.111	1962	1.1	0.139	2.2	81	0.021	0.037	1036	2.7	0.914	0.047	2.6	9196	12510	**10** [#1]	0.008	5119	5	0.024	2.9	1.4	< 0.003	0.091	91
	23-Oct-2023	AEMP-01-FS-17	78.9	3.1	0.003	< 0.837	0.444	0.166	0.056	1426	0.623	0.078	1.4	26	0.01	0.015	928	4.8	1.3	0.024	0.65	10078	14280	4.6	< 0.003	4203	2.5	0.041	0.535	0.958	< 0.003	0.037	61
	23-Oct-2023	AEMP-01-FS-18	78.5	108	< 0.007	< 0.837	3.2	0.178	0.037	1908	0.778	0.104	1.9	93	0.049	0.071	1015	6	0.64	0.035	1.6	8365	13262	**8** [#1]	0.004	3774	4.8	0.047	0.48	2.1	0.003	0.156	43
	23-Oct-2023	AEMP-01-FS-19	75.4	43	< 0.007	< 0.837	2.6	0.146	0.148	1815	0.926	0.179	1.8	91	0.028	0.055	1041	6.7	0.495	0.035	2.6	9049	15505	**6.8** [#1]	0.004	4314	3.8	0.041	0.341	2.1	0.002	0.147	91
	23-Oct-2023	AEMP-01-FS-20	77.7	6.6	< 0.007	< 0.837	0.333	0.062	0.056	1577	0.696	0.099	1.4	51	0.01	0.024	810	1.3	0.733	0.024	1.2	9075	15383	4.7	0.004	4574	2.4	0.036	0.698	0.958	< 0.003	0.052	60
	23-Oct-2023	AEMP-FS-01-21	79.2	8.7	< 0.007	< 0.837	0.388	0.062	0.056	1422	0.663	0.102	1.8	56	0.018	0.031	812	2.2	1.1	0.047	0.908	10208	16818	5.8	< 0.003	5623	2.5	0.04	0.642	1.3	< 0.003	0.055	73
	23-Oct-2023	AEMP-FS-01-22	78.3	5.2	< 0.007	< 0.837	0.499	0.083	0.037	1448	0.538	0.06	1.4	34	0.008	0.021	777	2.4	0.772	0.024	0.368	8268	14130	**9.6** [#1]	< 0.003	3538	2.2	0.03	0.09	1	< 0.003	< 0.113	81
	23-Oct-2023	AEMP-01-FS-07	79.9	3.3	0.002	< 0.837	0.523	0.064	< 0.1	1485	0.589	0.051	1.5	25	0.005	0.023	1121	2.2	1	0.013	0.478	10913	17790	5.8	< 0.003	4235	2.6	0.027	1.1	1.1	< 0.003	0.036	59
	23-Oct-2023	AEMP-01-FS-11	79.2	2.2	< 0.007	< 0.837	0.194	< 0.207	< 0.1	1537	0.69	0.056	1	29	0.006	0.021	1238	1.9	1.4	0.012	0.858	8885	14142	4.1	< 0.003	3330	2.2	0.04	0.54	0.958	< 0.003	0.035	48
	25-Sep-2024	AEMP-FS-01-1	77	3.2	0.005	0.257	0.431	0.136	< 0.049	1573	1.6	0.175	1.6	61	0.012	< 0.034	1422	1.9	0.857	0.038	3.5	9501	15473	4	< 0.001	2959	2.6	0.028	0.341	1.3	0.001	0.11	58
	25-Sep-2024	AEMP-FS-01-3	80	3.7	0.007	0.245	0.509	0.136	0.058	1533	0.602	0.052	1.4	29	0.015	< 0.034	1195	1.5	0.806	0.019	0.448	9929	17413	4.7	< 0.001	3121	2.3	0.027	0.188	1.6	0.001	0.081	76
	25-Sep-2024	AEMP-FS-01-4	79.3	15	0.01	0.269	2	0.245	0.058	1905	0.965	0.156	2.1	70	0.033	< 0.034	1195	4	0.605	0.096	2.2	10611	16846	3.8	0.007	3245	3.2	0.047	0.184	1.8	0.003	0.224	102
	25-Sep-2024	AEMP-FS-01-6	78.1	3	0.005	0.281	0.391	0.123	0.058	1431	0.656	0.093	1.3	25	0.012	< 0.034	1062	1.5	0.362	0.019	0.554	8930	16252	6.2	< 0.001	2840	2.1	0.022	0.265	1.3	< 0.001	0.066	60
	25-Sep-2024	AEMP-FS-01-9	76.8	5.1	0.004	0.216	0.443	0.138	< 0.049	1471	0.963	0.09	1.8	31	0.017	< 0.034	1272	2.6	0.851	0.024	1.1	8846	14298	4	< 0.001	2738	2.2	0.022	0.46	1.6	< 0.001	0.084	40
	25-Sep-2024	AEMP-FS-01-18	77.2	5.9	0.003	0.28	0.424	0.138	< 0.049	1435	0.969	0.08	2.4	38	0.02	0.046	1234	2.5	0.647	0.047	1.6	9783	16775	4.8	< 0.001	3268	2.5	0.029	0.527	1.3	0.001	0.071	78
	25-Sep-2024	AEMP-FS-01-20	77.5	3.7	< 0.003	0.305	0.258	< 0.114	0.062	1314	0.814	0.102	1.6	30	0.017	< 0.034	984	1.1	0.398	0.047	1.1	10320	25732	6.3	< 0.001	4047	2.1	0.022	0.451	1.3	0.001	0.084	52
	25-Sep-2024	AEMP-FS-01-21	76.8	4.3	< 0.003	0.28	0.295	< 0.114	< 0.049	1470	1.1	0.11	1.5	37	0.012	< 0.034	1209	1.8	0.468	0.024	1.5	9303	15768	4.2	< 0.001	3302	2.5	0.021	0.238	1.3	0.001	0.067	51
	25-Sep-2024	AEMP-FS-01-25	75.7	25	0.004	0.305	0.361	0.199	< 0.049	1805	0.862	0.131	2.3	42	0.078	0.047	1228	1.9	0.507	0.083	1.2	8769	14125	4.7	< 0.001	3389	3.5	0.022	0.285	1.3	0.005	0.082	60
	25-Sep-2024	AEMP-FS-01-28	78.6	5.7	0.004	< 0.215	0.48	< 0.114	< 0.049	1219	0.666	0.061	1.7	29	0.017	< 0.034	1090	1.9	0.468	0.024	0.451	8559	15439	5.1	< 0.001	2916	2.2	0.016	0.251	1.3	< 0.001	0.063	39
AEMP-FS-02	23-Oct-2023	AEMP-02-FS-02	77.6	5.1	0.003	< 0.837	0.444	0.062	0.037	1658	0.625	0.095	1.4	44	0.013	0.018	1091	1.4	0.749	0.035	0.412	8781	14789	4	0.004	3344	2.8	0.052	0.381	1.1	< 0.003	0.055	79
	23-Oct-2023	AEMP-02-FS-03	79.9	4.7	0.003	< 0.837	0.582	0.073	0.093	1677	0.708	0.141	1.5	51	0.015	0.018	833	2.9	0.914	0.047	1.1	10522	16810	**7** [#1]	0.004	4722	3.3	0.058	1.2	1.1	< 0.003	0.07	82
	23-Oct-2023	AEMP-02-FS-05	79.6	3.6	< 0.007	< 0.837	0.36	0.078	< 0.1	1834	0.586	0.093	1.4	24	0.005	0.021	1177	1.7	0.669	0.024	0.345	8326	10779	5.5	< 0.003	2975	2.9	0.047	0.177	0.851	< 0.003	< 0.113	54
	23-Oct-2023	AEMP-02-FS-06	79	15	< 0.007	0.383	0.651	0.12	0.13	1992	0.76	0.272	2.7	54	0.018	0.027	1027	4.2	0.698	0.071	1.6	9403	14210	5.4	0.008	4254	5.2	0.035	1.5	1.2	< 0.003	0.1	85
	23-Oct-2023	AEMP-02-FS-10	78.2	3.8	< 0.007	0.325	0.459	0.117	0.104	1591	0.854	0.238	1.9	56	0.017	0.023	912	2.4	0.938	0.073	2.2	9346	15282	5.3	0.004	5047	3.1	0.062	1.1	1.1	< 0.003	0.081	82
	23-Oct-2023	AEMP-02-FS-11	78.5	3.7	0.005	0.31	0.444	0.117	< 0.1	1329	0.661	0.092	1.6	45	0.011	0.029	888	1.9	1.1	0.024	0.581	10013	17470	**7.2** [#1]	< 0.003	5484	1.9	0.029	1.5	0.982	< 0.003	0.053	75
	23-Oct-2023	AEMP-02-FS-16	81.2	5.5	0.003	< 0.837	0.355	0.138	0.042	1571	0.596	0.06	2	43	0.011	0.026	735	1.2	1.1	0.024	0.247	10073	15197	**7.9** [#1,2]	< 0.003	5361	2.5	0.022	1.1	1	< 0.003	0.052	84
	23-Oct-2023	AEMP-02-FS-20	79.3	3.1	< 0.007	< 0.837	0.385	0.127	0.042	1490	0.596	0.079	1.4	30	0.013	0.016	761	1.2	1	0.024	0.556	8063	13334	**9.8** [#1,2]	< 0.003	4187	2.6	0.027	0.789	0.859	< 0.003	< 0.113	69
	23-Oct-2023	AEMP-FS-02-21	74	9.8	< 0.007	< 0.837	0.474	0.095	< 0.1	1455	0.733	0.081	1.5	41	0.008	0.026	840	2	0.76	0.024	1.2	8616	16001	4.7	< 0.003	4090	2.3	0.03	1.2	1.1	< 0.003	0.064	44
	23-Oct-2023	AEMP-FS-02-23	77.4	3.6	< 0.007	< 0.837	0.474	0.122	0.042	1347	0.623	0.077	1.8	52	0.006	0.016	585	1.1	1	0.037	0.679	8224	12549	5.9	< 0.003	4634	2.4	0.026	0.69	0.859	< 0.003	0.039	74
	25-Sep-2024	AEMP-FS-02-1	77.2	**22** [#2]	< 0.003	0.254	0.516	0.165	< 0.049	1476	1	0.123	2.4	56	0.02	< 0.034	1286	2.6	0.876	0.047	1.7	9155	13502	3.1	< 0.001	3020	2.4	0.027	0.304	1.8	0.002	0.117	61
	25-Sep-2024	AEMP-FS-02-3	77.4	6	< 0.003	0.246	0.448	0.157	< 0.049	1601	0.852	0.108	1.9	32	0.018	< 0.034	1545	1.4	0.522	0.071	0.744	9396	14869	**6.8** [#1]	< 0.001	2963	3	0.04	0.224	1.1	< 0.001	0.095	62
	25-Sep-2024	AEMP-FS-02-5	77	5.1	< 0.003	0.219	0.538	0.22	< 0.049	1513	0.779	0.085	2.2	35	0.011	< 0.034	1503	1.7	0.522	0.095	0.623	10533	17530	6.1	< 0.001	3280	3.1	0.053	0.435	1.4	< 0.001	0.085	58
	25-Sep-2024	AEMP-FS-02-9	75.2	8.7	< 0.003	< 0.215	0.403	0.157	< 0.049	1336	0.951	0.094	2.1	42	0.011	< 0.034	1316	1.7	0.47	0.024	1.4	8625	13559	3.1	< 0.001	2417	2.7	0.034	0.111	1.1	< 0.001	0.066	46
	25-Sep-2024	AEMP-FS-02-11	76.4	1.7	< 0.003	0.219	0.179	< 0.114	< 0.049	1016	0.615	0.054	1.1	14	0.007	< 0.034	1183	1.5	0.564	0.024	0.379	9345	15579	4.8	< 0.001	3220	1.5	0.038	0.082	1.1	< 0.001	0.081	44
	25-Sep-2024	AEMP-FS-02-15	72.5	11	0.004	< 0.215	0.493	0.173	< 0.049	1406	0.979	0.117	1.8	40	0.022	< 0.034	1306	2	0.282	0.061	1.2	9631	17569	3.9	< 0.001	3235	2.2	0.025	0.148	1.7	0.001	0.114	56
	25-Sep-2024	AEMP-FS-02-16	75.8	8	< 0.003	< 0.215	0.493	0.126	< 0.049	1219	1	0.085	1.7	52	0.015	< 0.034	1158	1.6	0.481	0.024	1.5	11434	19713	4.9	< 0.001	3745	2.4	0.023	0.422	1.1	< 0.001	0.095	76
	25-Sep-2024	AEMP-FS-02-18	78.3	9	0.012	0.301	0.717	0.188	< 0.049	1558	0.744	0.135	2.1	45	0.022	< 0.034	1511	2.2	0.94	0.035	0.839	9878	14953	4.9	< 0.001	3510	3	0.033	0.218	1.9	0.003	0.116	71
	25-Sep-2024	AEMP-FS-02-23	78.8	3.7	< 0.003	0.277	0.358	< 0.114	0.066	1423	0.656	0.067	1.3	30	0.015	< 0.034	1308	1.5	0.548	0.024	0.623	8899	12284	3.7	< 0.001	2962	2.1	0.026	0.178	1.4	< 0.001	0.066	60
	25-Sep-2024	AEMP-FS-02-24	78.8	11	< 0.003	0.246	0.819	0.251	< 0.049	1192	0.786	0.076	1.4	63	0.037	0.073	1048	2	0.679	0.095	0.948	8166	13053	3.3	< 0.001	2787	2.6	0.021	0.189	4.1	< 0.001	0.185	58
AEMP-FS-03	25-Sep-2024	AEMP-FS-03-1	81.6	5	0.009	0.262	2.6	0.218	0.05	1760	0.825	0.177	2.6	57	0.03	0.051	1662	3.3	0.799	0.115	2.6	12148	19154	3.8	0.005	6597	2.8	0.023	1.3	2.3	0.003	0.134	84
	25-Sep-2024	AEMP-FS-03-14	78.5	3.4	< 0.003	0.245	0.666	0.136	< 0.049	1695	0.818	0.082	1.4	40	0.015	< 0.034	1050	1.9	0.417	0.038	0.92	9208	15204	5.1	< 0.001	2955	2.6	0.025	0.325	1.1	0.001	0.079	44
	25-Sep-2024	AEMP-FS-03-15	78.6	4.2	0.003	0.22	0.705	0.136	< 0.049	1501	1.3	0.114	2.1	65	0.021	< 0.034	1453	2.8	0.582	0.019	2.3	8842	15715	6.6	< 0.001	2683	2.3	0.025	0.45	1.6	0.001	0.097	52
	25-Sep-2024	AEMP-FS-03-18	78.4	3.5	0.005	< 0.215	0.626	0.191	< 0.049	1507	0.717	0.06	1.8	34	0.012	< 0.034	1615	2.4	1.1	0.019	0.967	9029	15064	3.5	< 0.001	2914	2.3	0.03	0.193	1.6	0.003	0.077	56
	25-Sep-2024	AEMP-FS-03-21	75.9	3.9	0.005	0.257	0.352	0.136	< 0.049	1548	0.626	0.067	1.3	50	0.033	< 0.034	903	2	0.463	0.038	0.354	8071	14716	6	< 0.001	2995	2.9	0.02	0.302	1.1	< 0.001	< 0.049	55
	25-Sep-2024	AEMP-FS-03-27	77.5	8.6	0.009	0.249	0.587	0.15	< 0.049	1354	0.831	0.093	2.2	43	0.012	< 0.034	1260	2.2	0.458	0.057	1.1	11390	20482	4.5	< 0.001	3941	2.3	0.024	0.632	2	0.001	0.104	61
	25-Sep-2024	AEMP-FS-03-28	78.6	5.4	0.005	< 0.215	0.626	0.191	< 0.049	1627	0.984	0.112	2.7	50	0.012	< 0.034	1343	1.6	0.706	0.038	1.7	10279	18459	3.7	< 0.001	3354	2.9	0.024	0.69	1.6	0.002	0.112	70
	25-Sep-2024	AEMP-FS-03-29	78.1	4.6	< 0.003	0.281	0.509	0.136	< 0.049	1578	0.883	0.119	1.9	51	0.027	< 0.034	935	2.5	0.55	0.038	1.4	9264	17616	4.5	< 0.001	3284	2.7	0.021	0.369	1.1	0.001	0.081	80
	25-Sep-2024	AEMP-FS-03-10	78.4	0.744	< 0.003	< 0.215	0.159	< 0.114	< 0.049	1510	0.58	0.054	1.2	23	0.003	< 0.034	946	1.3	0.54	0.043	0.248	7634	11718	2.7	< 0.001	2671	1.7	0.017	0.274	1.1	< 0.001	< 0.049	29
	25-Sep-2024	AEMP-FS-03-11	77.4	3.8	< 0.003	< 0.215	0.587	< 0.114	< 0.049	1629	0.904	0.11	1.9	49	0.007	< 0.034	1065	2	0.467	0.038	1.5	11005	20902	**7.8** [#1]	< 0.001	3393	2.6	0.027	0.495	1.3	< 0.001	0.066	48

Whole Body Tissue Residue Analytical Results: Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Name	% Moisture (%)	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Lithium (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Phosphorus (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Strontium (mg/kg)	Thallium (mg/kg)	Tin (mg/kg)	Titanium (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
Federal Environmental Quality Guidelines [#1]			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**6.7**	---	---	---	---	---	---	---	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. X Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.
6. Superscript [#1] denotes values exceeding
   (ECCC. 2024. Federal Environmental Quality Guidelines Summary Table. Environment and Climate Change Canada, Ottawa, Ontario, November 2024.)
7. X Superscript [#2] denotes values exceeding upper control limit based on CES of two standard deviations from mean of reference concentrations
8. Denotes a Key Indicator Parameter

Table 12

Summary Statistics for Metal Tissue Concentrations in Bosworth Creek Slimy Sculpin in 2024

Project #: 417085-54419

Monitoring Station	Parameter	Units	Time Period	Basic Analysis								
				Percent detection (%)	Min (units)	Median (units)	Max (units)	Range (units)	Average (units)	Standard Deviation (units)	Standard Error (units)	95% Confidence Limit (units)
AEMP-FS-01												
	% Moisture	%	2024	100	73.7	77.4	80.0	6.3	77.4	1.5	0.3	0.7
			Historical		72.8	78.1	79.9	7.1	77.6	1.8	0.4	0.8
	Aluminum	mg/kg dw	2024	100	2.7	5.3	25.0	22.3	7.5	6.1	1.4	2.9
			Historical		1.6	4.1	108.0	106.4	11.4	24.4	5.5	11.4
	Antimony	mg/kg dw	2024	75	<0.003	0.004	0.014	0.011	0.005	0.003	0.001	0.001
			Historical	20	---	---	---	---	---	---	---	---
	Arsenic	mg/kg dw	2024	75	<0.215	0.269	0.382	0.167	0.244	0.089	0.020	0.042
			Historical	15	---	---	---	---	---	---	---	---
	Barium	mg/kg dw	2024	100	0.258	0.443	2.000	1.742	0.559	0.378	0.085	0.177
			Historical		0.194	0.433	3.200	3.006	0.666	0.784	0.175	0.367
	Boron	mg/kg dw	2024	65	<0.114	0.136	0.245	0.131	0.120	0.056	0.012	0.026
			Historical	85	0.031	0.069	0.178	0.147	0.083	0.041	0.009	0.019
	Cadmium	mg/kg dw	2024	35	---	---	---	---	---	---	---	---
			Historical	50	<0.030	0.025	0.148	0.133	0.038	0.035	0.008	0.017
	Calcium	mg/kg dw	2024	100	1219	1516	1905	686	1518	158	35	74
			Historical		1352	1549	1962	610	1566	169	38	79
	Chromium	mg/kg dw	2024	100	0.602	0.951	1.600	0.998	0.922	0.228	0.051	0.107
			Historical		0.538	0.644	1.100	0.6	0.688	0.131	0.029	0.061
	Cobalt	mg/kg dw	2024	100	0.052	0.094	0.175	0.123	0.098	0.033	0.007	0.015
			Historical		0.032	0.069	0.179	0.147	0.077	0.036	0.008	0.017
	Copper	mg/kg dw	2024	100	1.30	1.70	2.40	1.10	1.81	0.35	0.08	0.17
			Historical		1.00	1.50	2.20	1.20	1.53	0.30	0.07	0.14
	Iron	mg/kg dw	2024	100	25	37	70	45	40	12	3	6
			Historical		25	33	93	68	42	22	5	10
	Lead	mg/kg dw	2024	100	0.006	0.016	0.078	0.072	0.020	0.015	0.003	0.007
			Historical		0.005	0.010	0.049	0.044	0.013	0.010	0.002	0.005
	Lithium	mg/kg dw	2024	35	---	---	---	---	---	---	---	---
			Historical	100	0.011	0.020	0.071	0.060	0.024	0.015	0.003	0.007
	Magnesium	mg/kg dw	2024	100	984	1236	1422	438	1233	106	24	50
			Historical		777	1055	1238	461	1014	131	29	61
	Manganese	mg/kg dw	2024	100	1.10	1.95	4.00	2.90	2.08	0.65	0.15	0.31
			Historical		1.30	2.20	6.70	5.40	2.83	1.64	0.37	0.77
	Mercury	mg/kg dw	2024	100	0.362	0.727	2.100	1.738	0.803	0.419	0.094	0.196
			Historical		0.495	0.930	1.600	1.105	0.940	0.280	0.063	0.131
	Molybdenum	mg/kg dw	2024	100	0.019	0.024	0.096	0.077	0.039	0.022	0.005	0.010
			Historical		0.009	0.019	0.047	0.038	0.022	0.012	0.003	0.005
	Nickel	mg/kg dw	2024	100	0.448	1.200	3.500	3.052	1.270	0.721	0.161	0.338
			Historical		0.233	0.593	2.600	2.367	0.862	0.695	0.155	0.325
	Phosphorus	mg/kg dw	2024	100	7750	9260	11308	3558	9299	992	222	464
			Historical		7234	9014	10913	3679	9222	921	206	431
	Potassium	mg/kg dw	2024	100	11911	15410	25732	13821	15861	3177	710	1487
			Historical		10958	14389	18865	7907	14833	2052	459	960
	Selenium	mg/kg dw	2024	100	3.70	4.70	6.30	2.60	4.64	0.75	0.17	0.35
			Historical		3.20	5.25	10.00	6.80	5.62	1.83	0.41	0.85
	Silver	mg/kg dw	2024	10	---	---	---	---	---	---	---	---
			Historical	20	---	---	---	---	---	---	---	---
	Sodium	mg/kg dw	2024	100	2250	3183	4047	1797	3173	508	114	238
			Historical		2930	3811	5623	2693	3940	680	152	318
	Strontium	mg/kg dw	2024	100	2.10	2.50	3.50	1.40	2.59	0.42	0.09	0.20
			Historical		1.70	2.45	5.00	3.30	2.70	0.89	0.20	0.42
	Thallium	mg/kg dw	2024	100	0.016	0.022	0.047	0.031	0.025	0.007	0.002	0.003
			Historical		0.017	0.032	0.047	0.030	0.032	0.009	0.002	0.004
	Tin	mg/kg dw	2024	100	0.184	0.326	0.673	0.489	0.341	0.131	0.029	0.061
			Historical		0.090	0.538	2.900	2.810	0.653	0.590	0.132	0.276

Table 12

Summary Statistics for Metal Tissue Concentrations in Bosworth Creek Slimy Sculpin in 2024

Project #: 417085-54419

Monitoring Station	Parameter	Units	Time Period	Basic Analysis								
				Percent detection (%)	Min (units)	Median (units)	Max (units)	Range (units)	Average (units)	Standard Deviation (units)	Standard Error (units)	95% Confidence Limit (units)
	Titanium	mg/kg dw	2024	100	1.000	1.300	1.800	0.800	1.430	0.256	0.057	0.120
			Historical		0.952	1.050	2.100	1.148	1.175	0.342	0.076	0.160
	Uranium	mg/kg dw	2024	70	<0.001	0.001	0.005	0.004	0.001	0.001	0.0003	0.0005
			Historical	10	---	---	---	---	---	---	---	---
	Vanadium	mg/kg dw	2024	100	0.050	0.082	0.224	0.174	0.087	0.039	0.009	0.018
			Historical	65	0.017	0.040	0.156	0.139	0.048	0.040	0.009	0.019
	Zinc	mg/kg dw	2024	100	37.0	57.5	102.0	65.0	58.8	17.2	3.8	8.0
			Historical		34.0	55.5	91.0	57.0	57.8	17.9	4.0	8.4
AEMP-FS-02												
	% Moisture	%	2024	100	72.5	77.0	80.2	7.7	76.7	2.0	0.4	0.9
			Historical		74.0	78.4	81.2	7.2	78.3	1.6	0.4	0.7
	Aluminum	mg/kg dw	2024	100	1.7	6.0	22.0	20.3	7.2	4.5	1.0	2.1
			Historical		1.5	3.8	15.0	13.5	5.0	3.7	0.8	1.7
	Antimony	mg/kg dw	2024	20	---	---	---	---	---	---	---	---
			Historical	20	---	---	---	---	---	---	---	---
	Arsenic	mg/kg dw	2024	75	<0.215	0.250	0.339	0.124	0.231	0.080	0.018	0.038
			Historical	20	---	---	---	---	---	---	---	---
	Barium	mg/kg dw	2024	100	0.179	0.471	0.851	0.672	0.499	0.200	0.045	0.094
			Historical		0.267	0.437	1.300	1.033	0.466	0.229	0.051	0.107
	Boron	mg/kg dw	2024	30	<0.114	0.157	0.251	0.137	0.152	0.037	0.008	0.017
			Historical	100	0.031	0.076	0.170	0.139	0.089	0.038	0.009	0.018
	Cadmium	mg/kg dw	2024	5	---	---	---	---	---	---	---	---
			Historical	60	<0.030	0.040	0.130	0.115	0.044	0.034	0.008	0.016
	Calcium	mg/kg dw	2024	100	1016	1397	1601	585	1382	147	33	69
			Historical		1243	1499	1992	749	1522	187	42	87
	Chromium	mg/kg dw	2024	100	0.615	0.808	1.000	0.385	0.826	0.118	0.026	0.055
			Historical		0.546	0.651	0.854	0.308	0.662	0.080	0.018	0.037
	Cobalt	mg/kg dw	2024	100	0.049	0.087	0.168	0.119	0.091	0.031	0.007	0.014
			Historical		0.035	0.079	0.272	0.237	0.098	0.062	0.014	0.029
	Copper	mg/kg dw	2024	100	1.10	1.80	2.60	1.50	1.80	0.41	0.09	0.19
			Historical		1.00	1.40	2.70	1.70	1.54	0.40	0.09	0.19
	Iron	mg/kg dw	2024	100	14	40	63	49	40	13	3	6
			Historical		24	38	65	41	39	12	3	6
	Lead	mg/kg dw	2024	100	0.007	0.015	0.037	0.030	0.018	0.008	0.002	0.004
			Historical		0.002	0.011	0.028	0.026	0.011	0.006	0.001	0.003
	Lithium	mg/kg dw	2024	15	---	---	---	---	---	---	---	---
			Historical	100	0.013	0.018	0.034	0.021	0.020	0.006	0.001	0.003
	Magnesium	mg/kg dw	2024	100	1048	1273	1545	497	1279	132	29	62
			Historical		585	900	1177	592	885	168	37	78
	Manganese	mg/kg dw	2024	100	1.20	1.65	4.90	3.70	1.84	0.80	0.18	0.37
			Historical		1.10	1.80	4.20	3.10	2.08	0.94	0.21	0.44
	Mercury	mg/kg dw	2024	100	0.282	0.522	1.000	0.718	0.619	0.215	0.048	0.101
			Historical		0.534	0.959	1.600	1.066	0.968	0.257	0.058	0.120
	Molybdenum	mg/kg dw	2024	95	<0.001	0.024	0.118	0.117	0.043	0.030	0.007	0.014
			Historical	100	0.012	0.024	0.073	0.061	0.029	0.018	0.004	0.008
	Nickel	mg/kg dw	2024	100	0.379	0.887	1.700	1.321	0.968	0.399	0.089	0.187
			Historical		0.178	0.630	2.200	2.022	0.808	0.506	0.113	0.237
	Phosphorus	mg/kg dw	2024	100	7893	8942	11434	3541	9139	930	208	435
			Historical		7639	8614	12096	4457	8971	1125	252	526
	Potassium	mg/kg dw	2024	100	12284	14584	20415	8131	15295	2343	524	1096
			Historical		10779	13772	19745	8966	14182	2383	533	1115
	Selenium	mg/kg dw	2024	100	2.70	4.15	6.80	4.10	4.42	1.28	0.29	0.60
			Historical		2.70	5.00	9.80	7.10	5.54	2.08	0.47	0.98
	Silver	mg/kg dw	2024	0	---	---	---	---	---	---	---	---
			Historical	25	---	---	---	---	---	---	---	---

Table 12

Summary Statistics for Metal Tissue Concentrations in Bosworth Creek Slimy Sculpin in 2024

Project #: 417085-54419

Monitoring Station	Parameter	Units	Time Period	Basic Analysis								
				Percent detection (%)	Min (units)	Median (units)	Max (units)	Range (units)	Average (units)	Standard Deviation (units)	Standard Error (units)	95% Confidence Limit (units)
	Sodium	mg/kg dw	2024	100	2349	3142	4006	1657	3150	464	104	217
			Historical		2975	4070	5988	3013	4191	836	187	391
	Strontium	mg/kg dw	2024	100	1.50	2.40	3.10	1.60	2.47	0.45	0.10	0.21
			Historical		1.60	2.55	5.20	3.60	2.65	0.79	0.18	0.37
	Thallium	mg/kg dw	2024	100	0.021	0.027	0.053	0.032	0.031	0.009	0.002	0.004
			Historical		0.020	0.032	0.062	0.042	0.036	0.012	0.003	0.006
	Tin	mg/kg dw	2024	100	0.082	0.221	0.485	0.403	0.242	0.113	0.025	0.053
			Historical		0.177	0.781	1.500	1.323	0.841	0.374	0.084	0.175
	Titanium	mg/kg dw	2024	100	1.000	1.400	4.100	3.100	1.515	0.668	0.149	0.313
			Historical		0.737	0.982	1.400	0.663	0.982	0.159	0.036	0.074
	Uranium	mg/kg dw	2024	20	---	---	---	---	---	---	---	---
			Historical	0	---	---	---	---	---	---	---	---
	Vanadium	mg/kg dw	2024	95	0.049	0.079	0.185	0.136	0.086	0.033	0.007	0.015
			Historical	85	0.017	0.051	0.100	0.083	0.051	0.021	0.005	0.010
	Zinc	mg/kg dw	2024	100	33.0	55.5	112.0	79.0	56.3	16.7	3.7	7.8
			Historical		38.0	56.5	85.0	47.0	60.5	16.9	3.8	7.9
AEMP-FS-03												
	% Moisture	%	2024	100	75.9	77.8	81.6	5.7	78.0	1.1	0.3	0.5
	Aluminum	mg/kg dw	2024	100	0.7	3.8	9.0	8.3	3.9	2.1	0.5	1.0
	Antimony	mg/kg dw	2024	60	<0.003	0.005	0.011	0.008	0.005	0.004	0.001	0.002
	Arsenic	mg/kg dw	2024	35	---	---	---	---	---	---	---	---
	Barium	mg/kg dw	2024	100	0.1270	0.5870	2.6000	2.4730	0.6477	0.5410	0.1210	0.2532
	Boron	mg/kg dw	2024	70	<0.114	0.136	0.218	0.104	0.132	0.064	0.014	0.030
	Cadmium	mg/kg dw	2024	10	---	---	---	---	---	---	---	---
	Calcium	mg/kg dw	2024	100	1252	1529	1760	508	1540	137	31	64
	Chromium	mg/kg dw	2024	100	0.525	0.826	1.300	0.775	0.843	0.189	0.042	0.088
	Cobalt	mg/kg dw	2024	100	0.034	0.080	0.177	0.143	0.085	0.035	0.008	0.016
	Copper	mg/kg dw	2024	100	0.88	1.55	2.70	1.82	1.66	0.47	0.11	0.22
	Iron	mg/kg dw	2024	100	17.0	45.5	113.0	96.0	45.9	20.2	4.5	9.5
	Lead	mg/kg dw	2024	100	0.003	0.014	0.033	0.030	0.016	0.009	0.002	0.004
	Lithium	mg/kg dw	2024	20	---	---	---	---	---	---	---	---
	Magnesium	mg/kg dw	2024	100	810	1451	1662	852	1317	276	62	129
	Manganese	mg/kg dw	2024	100	1.30	2.10	3.30	2.00	2.18	0.48	0.11	0.23
	Mercury	mg/kg dw	2024	100	0.417	0.753	2.700	2.283	0.946	0.589	0.132	0.276
	Molybdenum	mg/kg dw	2024	100	0.014	0.038	0.115	0.101	0.038	0.024	0.005	0.011
	Nickel	mg/kg dw	2024	100	0.248	1.034	2.600	2.352	1.156	0.718	0.161	0.336
	Phosphorus	mg/kg dw	2024	100	7563	9858	12148	4585	9719	1213	271	568
	Potassium	mg/kg dw	2024	100	11718	15774	20902	9184	16238	2241	501	1049
	Selenium	mg/kg dw	2024	100	2.70	3.75	7.80	5.10	4.16	1.35	0.30	0.63
	Silver	mg/kg dw	2024	10	---	---	---	---	---	---	---	---
	Sodium	mg/kg dw	2024	100	2204	2935	6597	4393	3135	930	208	435
	Strontium	mg/kg dw	2024	100	1.30	2.30	3.10	1.80	2.26	0.50	0.11	0.24
	Thallium	mg/kg dw	2024	100	0.013	0.024	0.045	0.032	0.024	0.007	0.002	0.003
	Tin	mg/kg dw	2024	100	0.174	0.441	1.300	1.126	0.464	0.241	0.054	0.113
	Titanium	mg/kg dw	2024	100	0.893	1.350	2.500	1.607	1.510	0.450	0.101	0.211
	Uranium	mg/kg dw	2024	55	<0.001	0.001	0.003	0.002	0.001	0.001	0.0002	0.0004
	Vanadium	mg/kg dw	2024	75	<0.049	0.080	0.160	0.111	0.079	0.042	0.009	0.019
	Zinc	mg/kg dw	2024	100	21.0	51.5	84.0	63.0	50.8	17.0	3.8	7.9

Notes:

1. **Bold** text indicates that the calculated lower control limit is below zero and limit is set to typical reportable detection limit.

Table 13

Whole Body Tissue Residue Analytical Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	% Moisture (%)	% Lipid (%)	Polycyclic aromatic hydrocarbons (PAHs)|Carcinogenic								Polycyclic aromatic hydrocarbons (PAHs)|Non-Carcinogenic									
				Benzo(a)Anthracene (ng/g)	Benzo(b)Fluoranthene (ng/g)	Benzo(j,k)Fluoranthene (ng/g)	Benzo(g,h,i)Perylene (ng/g)	Benzo(a)Pyrene (ng/g)	Chrysene (ng/g)	Dibenzo(a,h)Anthracene (ng/g)	Indeno(1,2,3-c,d)Pyrene (ng/g)	Acenaphthene (ng/g)	Acenaphthylene (ng/g)	Anthracene (ng/g)	Benzo(e)Pyrene (ng/g)	Dibenzothiophene (ng/g)	Fluoranthene (ng/g)	Fluorene (ng/g)	Naphthalene (ng/g)	Perylene (ng/g)	Phenanthrene (ng/g)	Pyrene (ng/g)
BOSWORTH CREEK																					
AEMP-FS-01	02-Oct-2023	74.8	3.74	< 0.0342	< 0.0436	< 0.0534	< 0.0355	< 0.0746	0.119	< 0.0398	< 0.0375	0.165	< 0.0209	< 0.0504	< 0.073	0.14	0.084	0.254	1.06	< 0.0714	0.882	0.111
	25-Sep-2024	72.0	5.04	< 0.0478	< 0.0549	< 0.0613	< 0.0597	< 0.0888	< 0.0499	< 0.0754	< 0.0579	0.169	0.055	0.075	< 0.0884	0.241	0.102	0.389	1.58	0.107	0.943	0.149
AEMP-FS-02	01-Oct-2023	74.3	3.65	0.048	< 0.0532	< 0.0639	0.075	< 0.087	0.271	< 0.0215	0.024	0.217	0.036	0.061	0.146	0.202	0.327	0.261	1.02	< 0.0853	1.21	0.322
	25-Sep-2024	73.6	5.53	< 0.0471	< 0.0504	< 0.0575	< 0.0641	< 0.0826	0.122	< 0.0274	< 0.0694	0.254	0.047	0.085	< 0.0822	0.164	0.169	0.389	1.36	0.127	1.01	0.144
AEMP-FS-03	25-Sep-2024	72.7	4.66	< 0.023	< 0.0382	< 0.0421	0.025	< 0.0597	0.090	< 0.0266	< 0.0202	0.147	0.034	< 0.0289	0.080	0.073	0.094	0.200	1.58	< 0.0648	0.716	0.118

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.

Table 14

Whole Body Tissue Residue Analytical Results: Alkylated Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	% Moisture (%)	% Lipid (%)	2-Methylanthracene (ng/g)	C1-Substituted Acenaphthene (ng/g)	7-Methylbenzo[a]Pyrene (ng/g)	1-Methylchrysene (ng/g)	5- & 6-Methylchrysene (ng/g)	C1-Substituted Benzo[a]anthracene/Chrysene (ng/g)	5,9-Dimethylchrysene (ng/g)	C2-Substituted Benzo[a]anthracene/Chrysene (ng/g)	C3-Substituted Benzo[a]anthracene/Chrysene (ng/g)	C4-Substituted Benzo[a]anthracene/Chrysene (ng/g)	C1-Substituted Benzofluoranthenes/Pyrenes (ng/g)	C2-Substituted Benzofluoranthenes/Pyrenes (ng/g)	2-Methylfluorene (ng/g)	C1-Substituted Fluorene (ng/g)	1,7-Dimethylfluorene (ng/g)	C2-Substituted Fluorene (ng/g)	C3-Substituted Fluorene (ng/g)	3-Methylfluoranthene/Benzo[a]Fluorene (ng/g)
BOSWORTH CREEK																					
AEMP-FS-01	02-Oct-2023	74.8	3.74	< 0.0808	< 0.0318	< 0.0539	< 0.0503	< 0.0487	0.252	< 0.0989	0.451	< 0.0683	0.196	< 0.0539	< 0.0583	0.061	0.315	0.114	0.699	1.84	< 0.0769
	25-Sep-2024	72.0	5.04	0.412	< 0.0352	< 0.11	< 0.0604	< 0.0654	< 0.0628	< 0.0717	< 0.0717	< 0.0623	< 0.0712	< 0.11	< 0.0546	< 0.0628	< 0.0628	0.144	< 0.0691	< 0.0802	< 0.0297
AEMP-FS-02	01-Oct-2023	74.3	3.65	< 0.0882	< 0.0536	< 0.0815	0.084	0.055	0.554	< 0.0818	0.764	0.147	0.132	0.21	0.108	0.062	0.338	0.095	1.04	2.1	0.165
	25-Sep-2024	73.6	5.53	< 0.0524	< 0.0564	< 0.0498	< 0.0435	< 0.0471	0.121	< 0.0561	< 0.0561	< 0.0604	< 0.0881	< 0.0498	< 0.0803	0.057	0.516	< 0.0987	0.347	0.747	< 0.0547
AEMP-FS-03	25-Sep-2024	72.7	4.66	0.049	< 0.0548	< 0.0453	0.025	< 0.0229	0.100	< 0.0574	< 0.0574	< 0.0366	< 0.0406	< 0.0453	< 0.0534	< 0.0407	0.383	< 0.0387	0.170	0.197	< 0.03

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.

Table 14

Whole Body Tissue Residue Analytical Results: Alkylated Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	C1-Substituted Fluoranthene/Pyrene (ng/g)	C2-Substituted Fluoranthene/Pyrene (ng/g)	C3-Substituted Fluoranthene/Pyrene (ng/g)	C4-Substituted Fluoranthene/Pyrene (ng/g)	1-Methylnaphthalene (ng/g)	2-Methylnaphthalene (ng/g)	C1-Substituted Naphthalene (ng/g)	1,2-Dimethylnaphthalene (ng/g)	2,6-Dimethylnaphthalene (ng/g)	C2-Substituted Naphthalene (ng/g)	2,3,6-Trimethylnaphthalene (ng/g)	2,3,5-Trimethylnaphthalene (ng/g)	C3-Substituted Naphthalene (ng/g)	1,4,6,7-Tetramethylnaphthalene (ng/g)	C4-Substituted Naphthalene (ng/g)	1-Methylphenanthrene (ng/g)	2-Methylphenanthrene (ng/g)	3-Methylphenanthrene (ng/g)	9/4-Methylphenanthrene (ng/g)	C1-Substituted Phenanthrene/Anthracene (ng/g)	1,7-Dimethylphenanthrene (ng/g)	1,8-Dimethylphenanthrene (ng/g)	2,6-Dimethylphenanthrene (ng/g)	3,6-Dimethylphenanthrene (ng/g)
BOSWORTH CREEK																									
AEMP-FS-01	02-Oct-2023	< 0.0769	0.344	0.33	0.087	0.559	0.67	1.23	0.184	0.418	2.57	0.685	0.551	2.16	0.314	1.17	0.188	0.16	0.134	0.289	0.424	0.238	< 0.121	< 0.121	< 0.124
	25-Sep-2024	0.475	< 0.0557	< 0.0372	< 0.0533	0.903	1.40	2.31	0.241	0.525	3.07	0.854	0.894	3.36	0.417	1.73	0.772	0.141	0.159	0.315	0.300	0.381	< 0.0696	< 0.0696	0.083
AEMP-FS-02	01-Oct-2023	0.435	0.589	0.183	0.205	0.688	0.801	1.49	0.248	0.595	3.35	1.02	0.773	3.19	0.384	1.81	0.38	0.307	0.284	0.53	1.19	0.418	0.095	0.077	0.157
	25-Sep-2024	< 0.0547	0.157	< 0.0452	< 0.0303	0.954	1.40	2.35	0.268	0.581	3.56	0.813	0.572	2.77	0.450	1.66	0.154	0.152	0.161	0.289	0.756	< 0.0854	< 0.0819	< 0.0819	< 0.0788
AEMP-FS-03	25-Sep-2024	< 0.03	< 0.0304	< 0.0229	< 0.0322	0.72	1.19	1.91	0.14	0.303	2.00	0.415	0.303	1.36	0.134	1.06	0.152	0.109	0.107	0.229	0.597	0.122	< 0.021	< 0.021	0.051

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.

Table 14

Whole Body Tissue Residue Analytical Results: Alkylated Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	C2-Substituted Phenanthrene/Anthracene (ng/g)	1,2,6-Trimethylphenanthrene (ng/g)	C3-Substituted Phenanthrene/Anthracene (ng/g)	C4-Substituted Phenanthrene/Anthracene (ng/g)	2- & 3-Methyldibenzothiophene (ng/g)	C1-Substituted Dibenzothiophene (ng/g)	2,4-Dimethyldibenzothiophene (ng/g)	4,6-Dimethyldibenzothiophene (ng/g)	C2-Substituted Dibenzothiophene (ng/g)	C3-Substituted Dibenzothiophene (ng/g)	C4-Substituted Dibenzothiophene (ng/g)
BOSWORTH CREEK												
AEMP-FS-01	02-Oct-2023	1.22	0.107	3.06	12.8	< 0.0601	0.23	< 0.118	0.15	0.828	0.953	0.594
	25-Sep-2024	0.778	< 0.0747	< 0.0747	11.3	0.085	0.351	0.092	0.441	0.386	< 0.0868	0.339
AEMP-FS-02	01-Oct-2023	2.23	< 0.107	2.49	13.4	0.224	0.617	0.125	0.294	1.7	1.6	0.832
	25-Sep-2024	1.46	< 0.0909	1.82	8.61	< 0.104	0.185	< 0.0887	0.148	0.518	< 0.0962	< 0.0498
AEMP-FS-03	25-Sep-2024	0.479	< 0.0293	0.462	3.01	< 0.0527	0.06	< 0.0775	< 0.0623	0.216	< 0.0592	< 0.0515

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Highlighting indicates parameters above applied guideline/criteria.
4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.

Figures

Legend

Flow Direction

N

0 500 1,000

Metres

1:40,000

NAD 1983 UTM Zone 9N

IMPERIAL
NORMAN WELLS
AQUATICS EFFECTS MONITORING PROGRAM

SITE LOCATION MAP

TRS Advisian

Date:	Drawn by:	Edited by:	App'd by:
25-APR-24	SC	KR	SG

Project No.	FIG No	REV
417085-54419-24200	1	E

USER NAME: Kenneth.W.Ritchie
ISSUING OFFICE: BURNABY GIS
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SAVE DATE & TIME: 4/29/2024 2:01:08 PM

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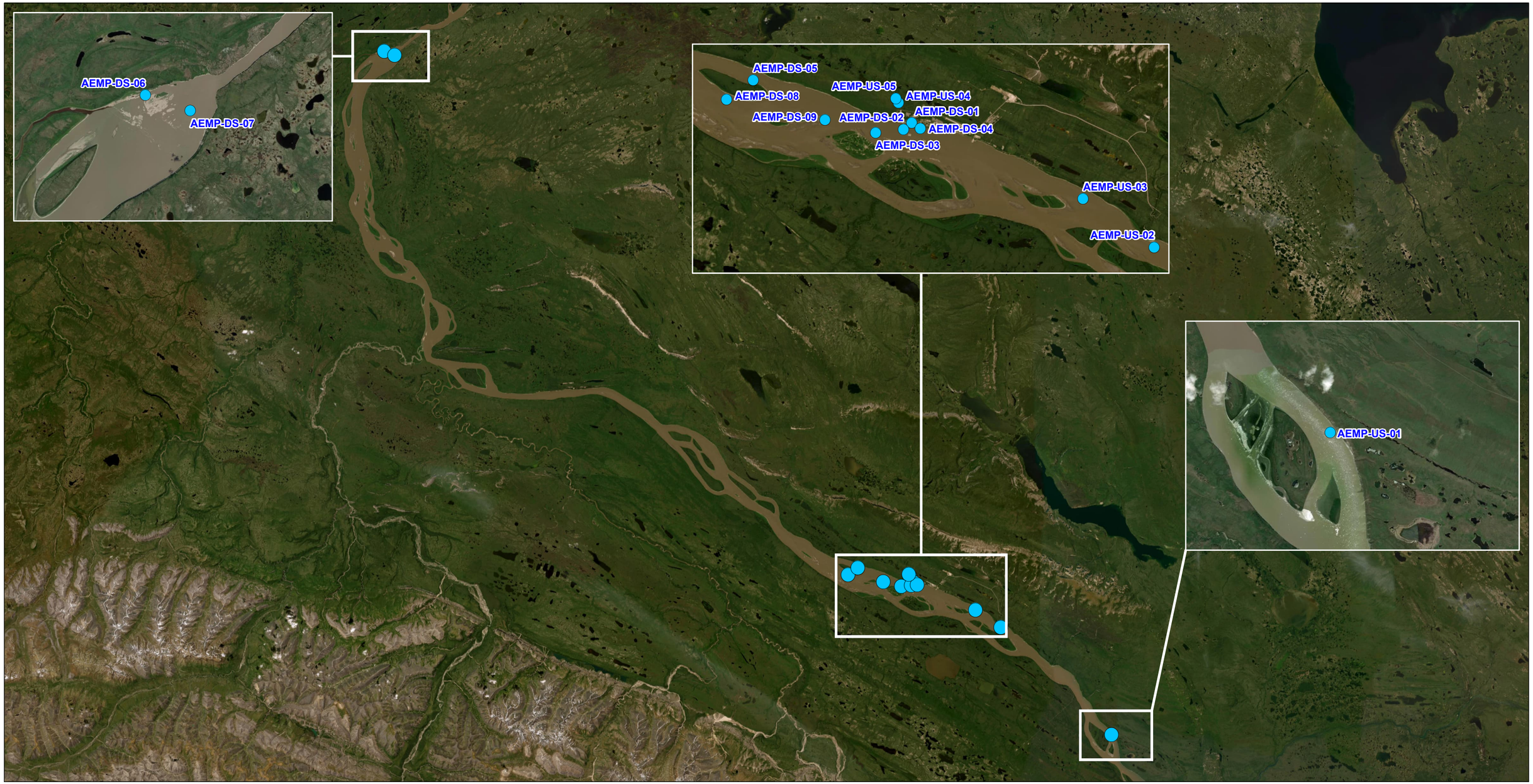

Water Sampling Location

0 10 20
Kilometres
1:700,000
NAD 1983 UTM Zone 9N

N

IMPERIAL
NORMAN WELLS
AQUATIC EFFECTS MONITORING PROGRAM

AEMP WATER SAMPLING LOCATIONS

Date: 12-MAR-25	Drawn by: KR	Edited by: KR	App'd by: . .

Project No. 417085-54419-24200

REV 2 A

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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ISSUING OFFICE: VANCOUVER GIS
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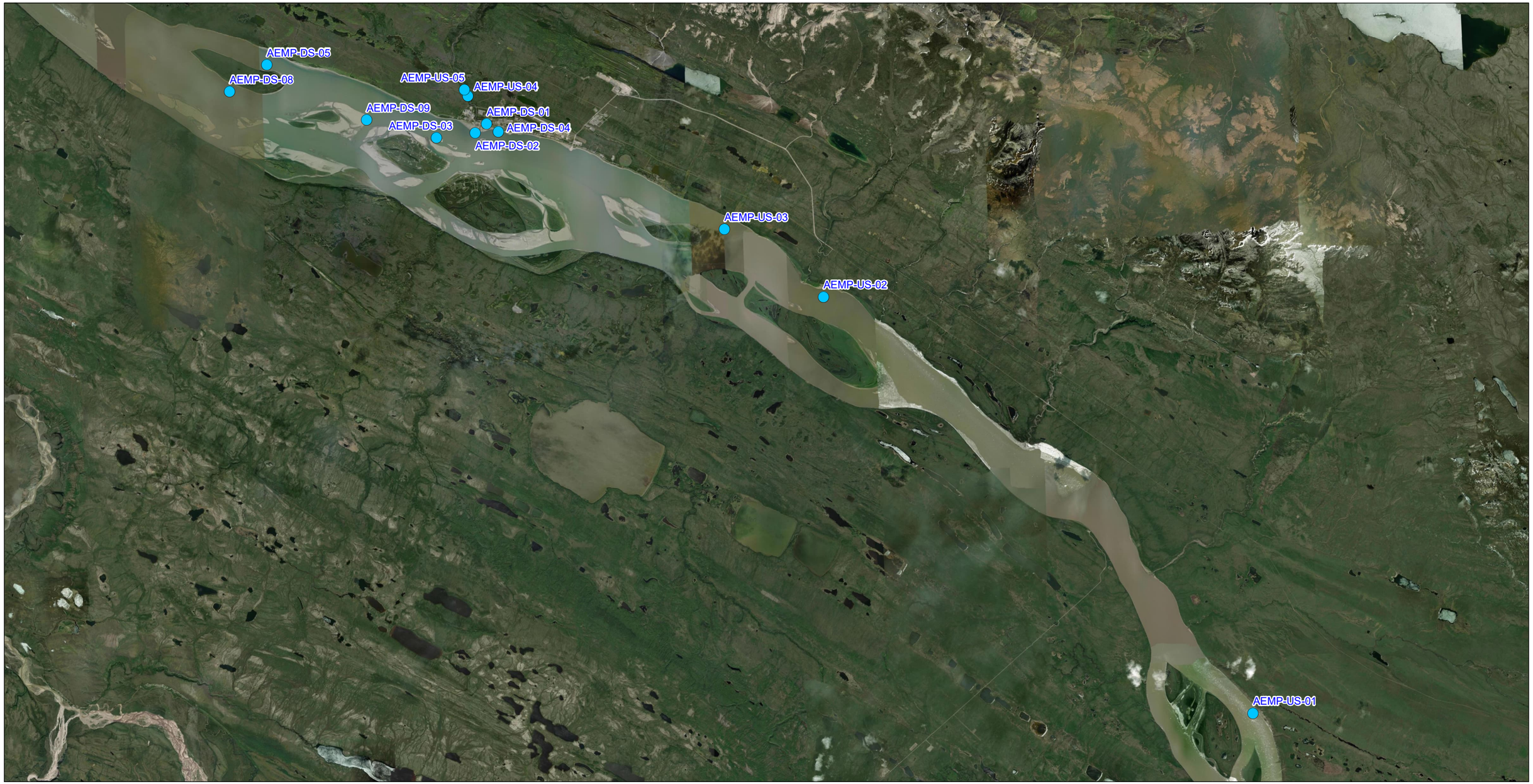

Water Sampling Location

0 2 4
Kilometres
1:180,000
NAD 1983 UTM Zone 9N

N

IMPERIAL
NORMAN WELLS
AQUATIC EFFECTS MONITORING PROGRAM

NEAR FACILITY AEMP
WATER SAMPLING LOCATIONS

Date: 12-MAR-25	Drawn by: KR	Edited by: KR	App'd by: . .
Imperial		Project No. 417085-54419-24200	
		3	REV A

FILE LOCATION: N:\PROJECTS\ImperialOil\NormanWells\MXDs\417085-54419-24200\Near_Facility_Water_Sampling_Locations.mxd

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ISSUING OFFICE: VANCOUVER GIS
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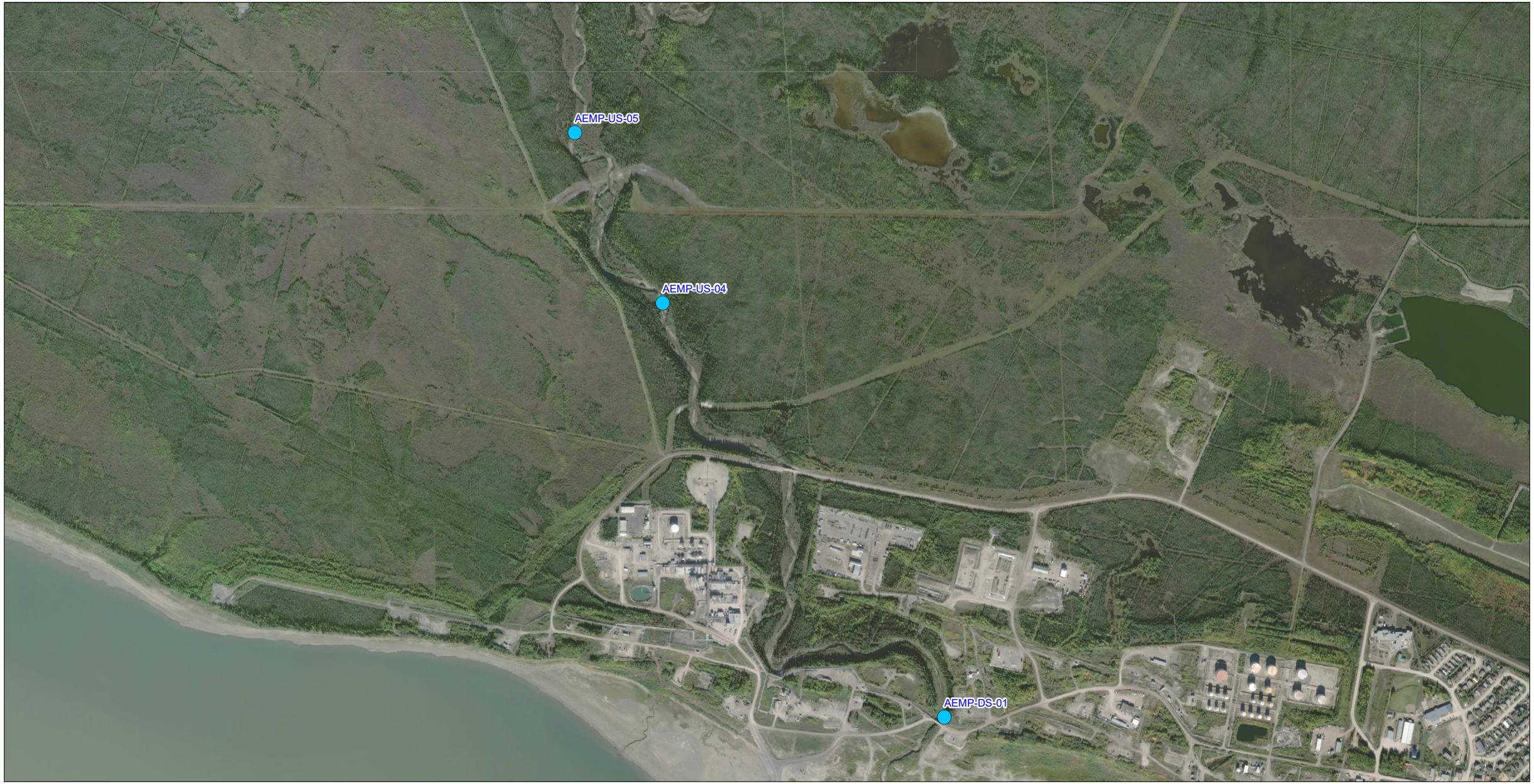
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Water Sampling Location

0 250 500
Meters
1:12,000
NAD 1983 UTM Zone 9N

N

IMPERIAL
NORMAN WELLS
AQUATIC EFFECTS MONITORING PROGRAM

BOSWORTH CREEK AEMP
WATER SAMPLING LOCATIONS

Date: 14-FEB-25	Drawn by: KR	Edited by: KR	App'd by: . .

Imperial

Project No. 417085-54419-24200

4 | REV A

FILE LOCATION: N:\PROJECTS\ImperialOil\NormanWells\MXDs\417085-54419-24200\Bosworth_Creek_Water_Sampling_Locations.mxd

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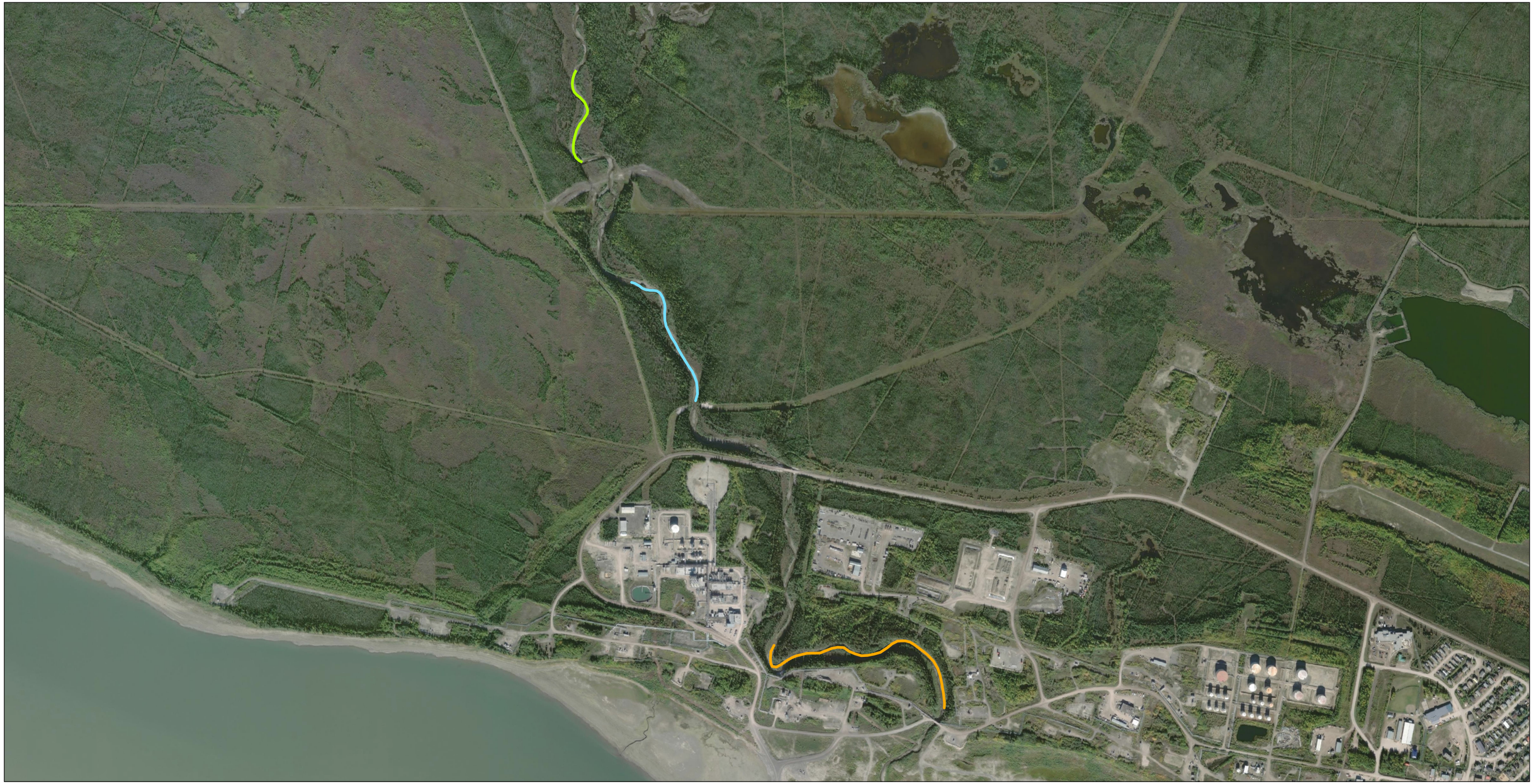

AEMP-FS-01
AEMP-FS-02
AEMP-FS-03

0 250 500
Meters
1:12,000
NAD 1983 UTM Zone 9N

N

IMPERIAL
NORMAN WELLS
AQUATIC EFFECTS MONITORING PROGRAM

BOSWORTH CREEK FISH SAMPLING RANGE

Date: 02-APR-25	Drawn by: KR	Edited by: KR	App'd by: . .

Imperial

Project No. 417085-54419-24200

REV 5 B

FILE LOCATION: N:\PROJECTS\ImperialOil\NormanWells\MXDs\417085-54419-24200\Bosworth_Creek_Fish_Sampling_Ranges.mxd

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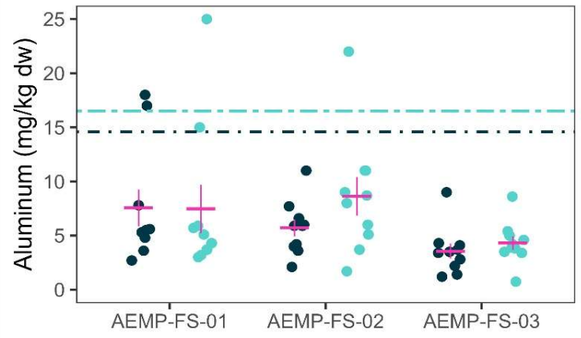
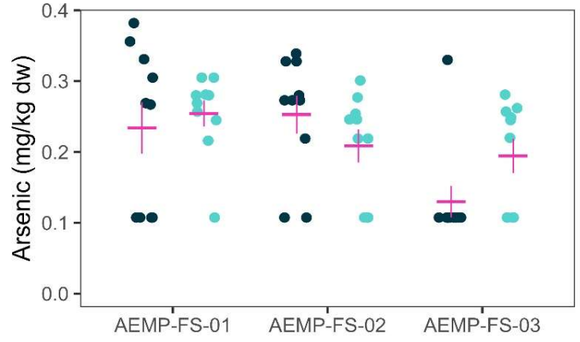
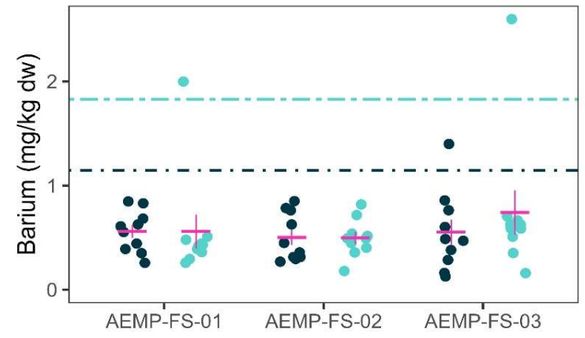
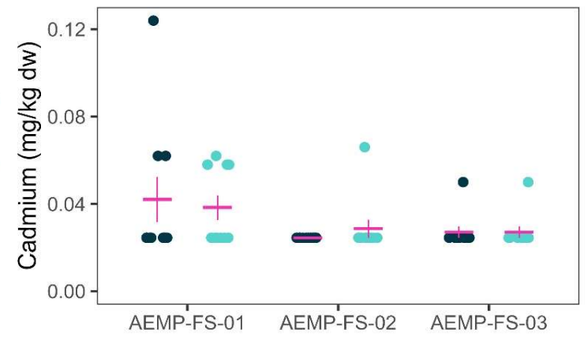
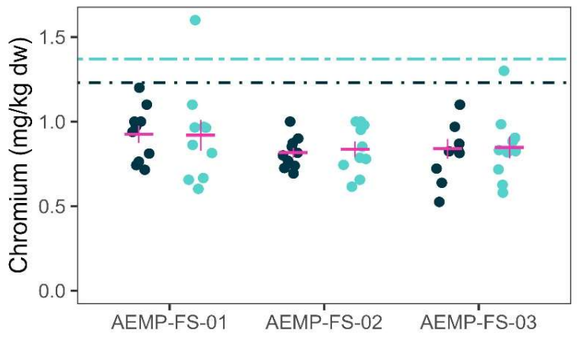
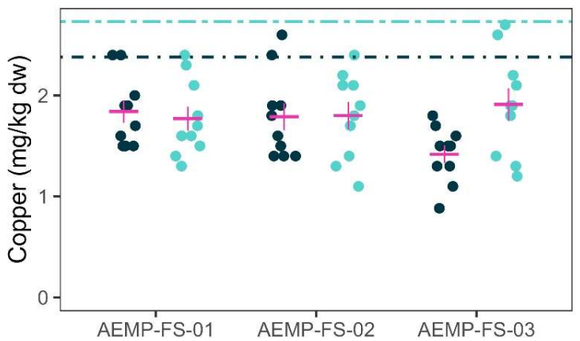


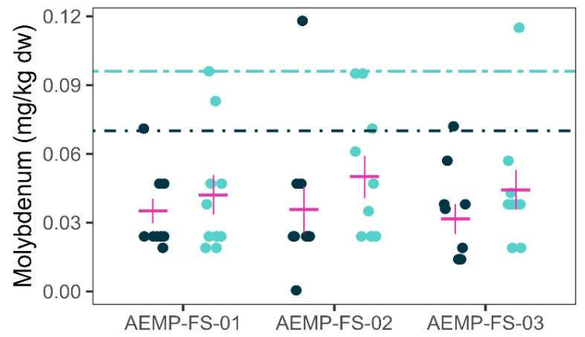


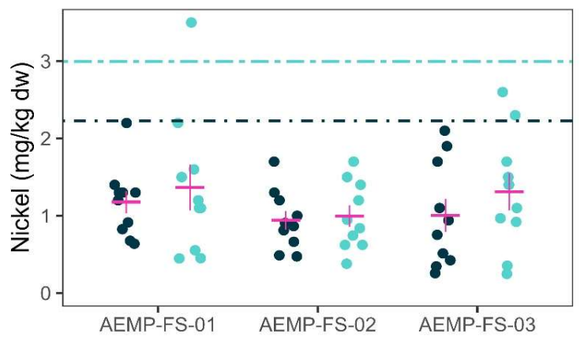


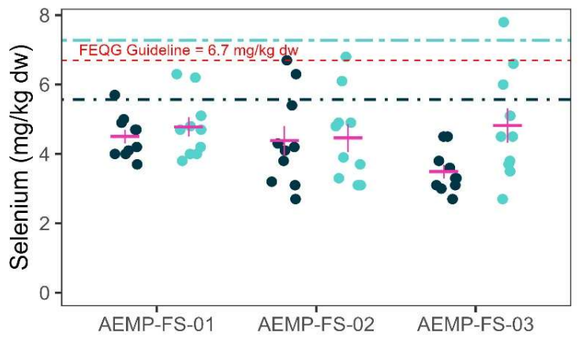


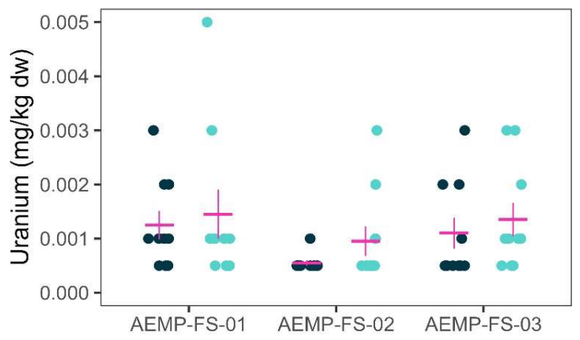


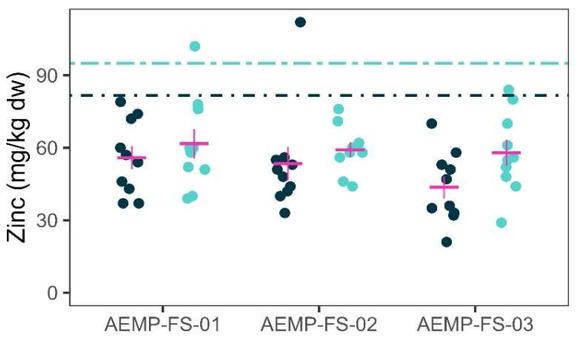












Site

Female UCL Male UCL

Sex Female Male

IMPERIAL
AQUATIC EFFECTS MONITORING PROGRAM
NORMAN WELLS, NT

DRY WEIGHT METAL TISSUE CONCENTRATIONS (MG/KG DW) IN SLIMY SCULPIN COLLECTED FROM BOSWORTH CREEK IN 2024

Date:	Drawn by:	Edited by:	App'd by:
31-Mar-25	GY	CM	AH

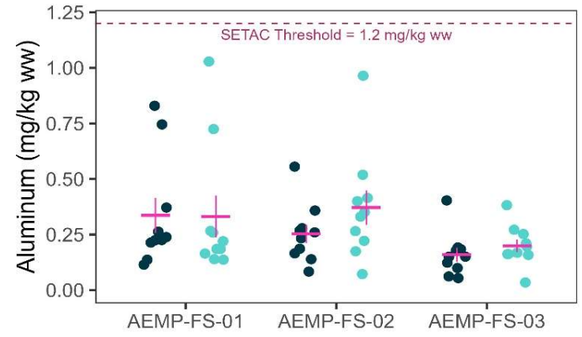
WorleyParsons Project No.: 417085-54419-24200

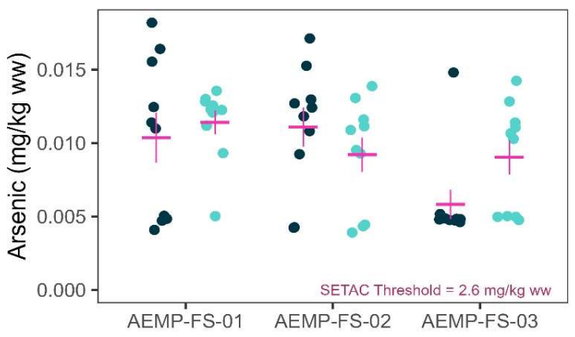
FIG No.: 6

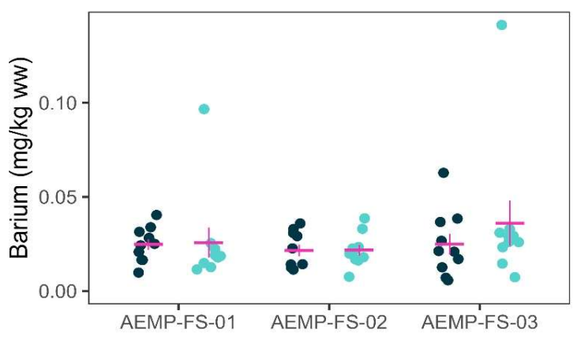
REV: A

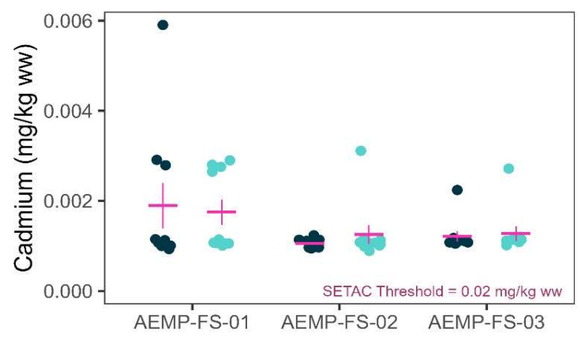
FILE LOCATION:

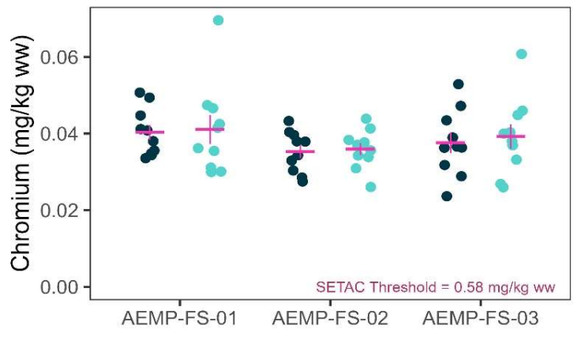
FILE DIRECTORY:

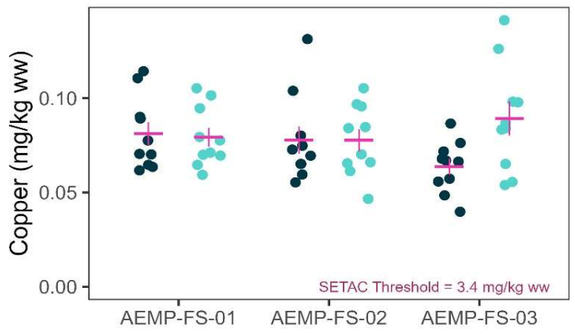


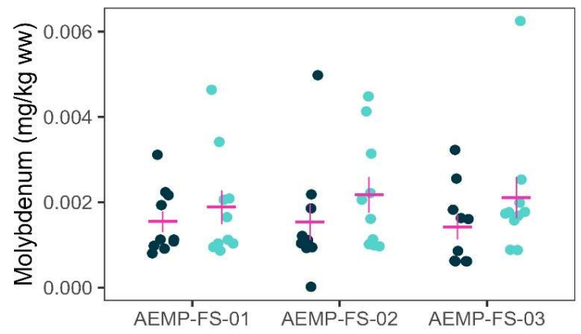


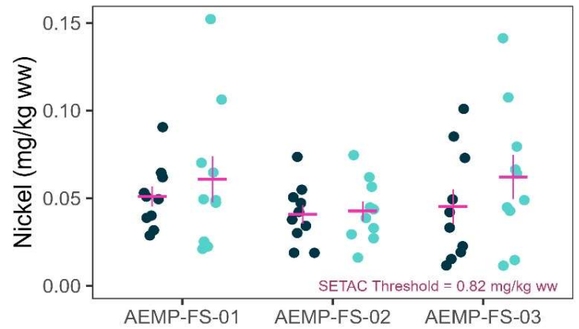


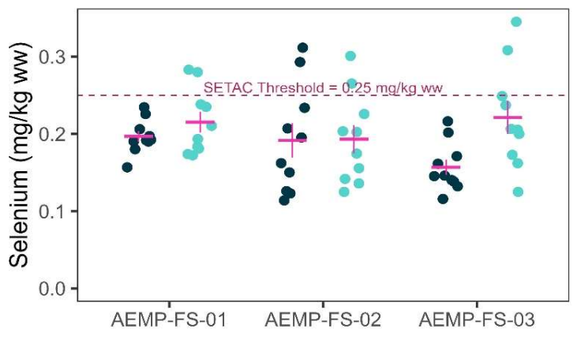


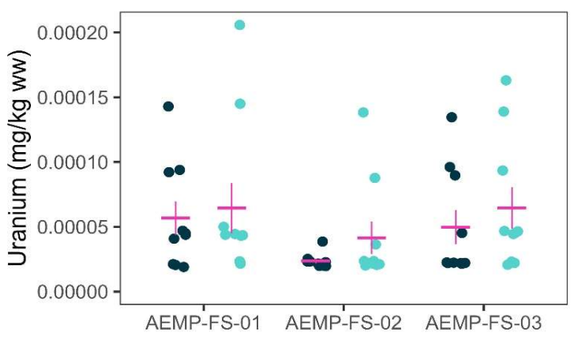


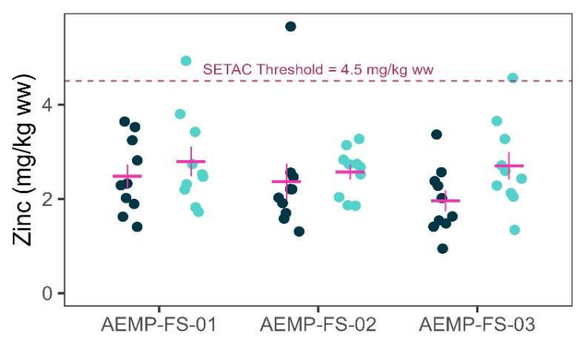












Site

Sex • Female • Male

IMPERIAL
AQUATIC EFFECTS MONITORING PROGRAM
NORMAN WELLS, NT

WET WEIGHT METAL TISSUE CONCENTRATIONS (MG/KG WW) IN SLIMY SCULPIN COLLECTED FROM BOSWORTH CREEK IN 2024

Date:	31-Mar-25	Drawn by:	GY	Edited by:	CM	App'd by:	AH

Imperial

TRS Advisian

WorleyParsons Project No.
417085-54419-24200

FIG No. 7 REV A

FILE LOCATION:

FILE DIRECTORY:

Appendix A. Limitations of Liability, Scope of Report and Third Party Reliance

Limitation of Liability, Scope of Report, and Third-Party Reliance

This report has been prepared and the work referred to in this report has been undertaken by Tłegǫ̀hłı Reclamation Services Advisian (TRSA) for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective insurers, agents, employees, and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and TRSA make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigation undertaken by TRSA with respect to this report and any conclusions or recommendations made in this report reflect TRSA' s judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for the specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary.

Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of TRSA. Nothing in this report is intended to constitute or provide a legal opinion.

Appendix B. Surface Water Quality Assurance and Quality Control

Appendix B – Surface Water Quality Assurance/Quality Control

B.1 Field QA/QC Program

The surface water field grab sample and PDB QA/QC program for the AEMP consisted of four field duplicate samples. Three trip blank and three field blank samples were also submitted for analysis of petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs) and/or alkylated polycyclic aromatic hydrocarbons (aPAHs) as part of the 2024 field program.

Surface water SPMD QA/QC consisted of three field duplicates, one field blank sample, one trip blank sample and three time-zero degradation blank samples. Time zero samples were analyzed with each sample batch.

For the field duplicate samples, the QA/QC results were evaluated by calculating the relative percent difference (RPD) between the parent and duplicate sample results and comparison of the RPD to designated alert limits.

The RPD is calculated using the following formula:

$$\text{RPD } \% = \left(\frac{|x1 - x2|}{(x1 + x2)/_2} \right) * 100$$

Where x_1 = original field sample
x_2 = blind field duplicate sample

Consistent with laboratory practices and to permit reliable calculations, an RPD is only considered to be statistically relevant when the original and duplicate sample concentrations are at least five times the reportable detection limit (RDL). These limits vary parameter to parameter and sample to sample and are indicated by the laboratory alongside the analytical results in the Certificates of Analysis (Appendix H).

The RPD alert limit for hydrocarbons and PAHs is 80%, the alert limit for all other parameters presented herein is 50% (Imperial 2004).

There are no minimum detection limits reported for the SPMD PAHs results. As such, RPDs are calculated for all samples; however, due to the very low masses detected and the uncertainty introduced in the concentration calculation, RPD alert limits have been set at 100%.

Most PHC sample results were below the laboratory detection limits so RPDs could not be calculated. Oil and grease was the only hydrocarbon parameter with concentrations above the detection limit for the parent and duplicate analysis and the RPD was below the alert limit criteria.

RPD for all other parameters for all duplicate samples met their alert limit criteria (Tables 3, 6 and 7).

The designated field and trip blank alert limits are >5X the reportable detection limit (RDL) for BTEX, PAH and aPAHs and 2X RDL for PHC F1 though F4. Blank results are compared to the alert limits and are presented in Tables B-1, B-2 and B-3 All of the results were below the RDLs.

There were no exceedances of field or trip blank alert limits in the 2024 program.

B.2 Laboratory QA/QC Program

The laboratory QA/QC program consisted of one or more of the following analyses:

- Instrument and extraction surrogate recoveries for samples that were analyzed.
- The analysis of method blank, laboratory duplicate, matrix spike, and/or laboratory control samples for the sample analytical batches that were analyzed.

The laboratory QA/QC results are presented in the laboratory certificates of analysis and data quality checklists (Appendix H) and are summarized in Table B-4.

Nitrogen parameters were often analyzed past method-specific hold times due to limitations in sample shipping, which may increase uncertainty in reported results. This also applies to a few other parameters, as summarized in Table B-4. This does not alter the interpretation of data presented herein. No data quality issues were noted that would impact the data presented.

No field or laboratory QA/QC issues were identified that would affect the overall conclusions presented in this report. Overall, the results reported are considered to be reliable.

Table B-1

Field and Trip Blank Results: Petroleum Hydrocarbons (PHCs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	m&p-Xylene (mg/L)	o-Xylene (mg/L)	Xylenes (Total) (mg/L)	PHC F1 (C_6-C_{10}) (mg/L)	PHC F1 (C_6-C_{10}) - BTEX (mg/L)	PHC F2 (C_{10}-C_{16}) (mg/L)	PHC F3 (C_{16}-C_{34}) (mg/L)	PHC F4 (C_{34}-C_{50}) (mg/L)
Alert Limits		**>5xRDL**	**>5xRDL**	**>5xRDL**	**>5xRDL**	**>5xRDL**	**>5xRDL**	**>2xRDL**	**>2xRDL**	**>2xRDL**	**>2xRDL**	**>2xRDL**
Surface Water Field Blank	18-Mar-2024	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20
	16-Aug-2024	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---
	10-Sep-2024	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---
Surface Water Trip Blank	18-Mar-2024	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20
	16-Aug-2024	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---
	10-Sep-2024	< 0.00040	< 0.00040	< 0.00040	< 0.00080	< 0.00040	< 0.00089	< 0.10	< 0.10	< 0.10	---	---

NOTES:

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
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4. Highlighting indicates non-detect parameters above applied guideline/criteria.
5. Highlighting indicates parameters at applied guideline/criteria.

Table B-2

Field and Trip Blank Results: Polycyclic Aromatic Hydrocarbons (PAHs)

PROJECT No.: 417085-54419		Polycyclic aromatic hydrocarbons (PAHs)|Carcinogenic								Polycyclic aromatic hydrocarbons (PAHs)|Non-Carcinogenic														
Sampling Location	Date (dd-mmm-yyyy)	Benzo(a)Anthracene (mg/L)	Benzo(b,j)Fluoranthene (mg/L)	Benzo(k)Fluoranthene (mg/L)	Benzo(g,h,i)Perylene (mg/L)	Benzo(a)Pyrene (mg/L)	Chrysene (mg/L)	Dibenzo(a,h)Anthracene (mg/L)	Indeno(1,2,3-c,d)Pyrene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Acridine (mg/L)	Anthracene (mg/L)	Benzo(c)Phenanthrene (mg/L)	Benzo(e)Pyrene (mg/L)	Biphenyl (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Perylene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)	Retene (mg/L)	Quinoline (mg/L)
RPD Alert Limits		>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL	>5xRDL
Surface Water Field Blank	18-Mar-2024	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
Surface Water Trip Blank	18-Mar-2024	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020
	16-Aug-2024	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000085	< 0.0000075	< 0.0000085	< 0.0000075	< 0.0000085	< 0.00010	< 0.00010	< 0.000040	< 0.000010	< 0.000050	< 0.000050	< 0.000020	< 0.000010	< 0.000050	< 0.00010	< 0.00010	< 0.000050	< 0.000050	< 0.000020	< 0.000050	< 0.00020

NOTES:

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Table B-3

Field and Trip Blank Results: Alkylated Polycyclic Aromatic Hydrocarbons (aPAHs)

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	1-Methylnaphthalene (ug/L)	2-Methylnaphthalene (ug/L)	C1benzobjkfluoranthene/benzoapyrene (ug/L)	C1-Substituted Acenaphthene (ug/L)	C1-Substituted Benzo[a]anthracene/Chrysene (ug/L)	C1-Substituted Biphenyl (ug/L)	C1-Substituted Dibenzothiophene (ug/L)	C1-Substituted Fluoranthene/Pyrene (ug/L)	C1-Substituted Fluorene (ug/L)	C1-Substituted Naphthalene (ug/L)	C1-Substituted Phenanthrene/Anthracene (ug/L)	C2benzobjkfluoranthene/benzoapyrene (ug/L)	C2-Substituted Benzo[a]anthracene/Chrysene (ug/L)	C2-Substituted Biphenyl (ug/L)	C2-Substituted Dibenzothiophene (ug/L)	C2-Substituted Fluoranthene/Pyrene (ug/L)	C2-Substituted Fluorene (ug/L)	C2-Substituted Naphthalene (ug/L)	C2-Substituted Phenanthrene/Anthracene (ug/L)	C3-Substituted Benzo[a]anthracene/Chrysene (ug/L)	C3-Substituted Dibenzothiophene (ug/L)	C3-Substituted Fluoranthene/Pyrene (ug/L)	C3-Substituted Fluorene (ug/L)	C3-Substituted Naphthalene (ug/L)	C3-Substituted Phenanthrene/Anthracene (ug/L)	C4-Substituted Benzo[a]anthracene/Chrysene (ug/L)	C4-Substituted Dibenzothiophene (ug/L)	C4-Substituted Fluoranthene/Pyrene (ug/L)	C4-Substituted Naphthalene (ug/L)	C4-Substituted Phenanthrene/Anthracene (ug/L)
Surface Water Field Blank	18-Mar-2024	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050
	16-Aug-2024	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10-Sep-2024	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Surface Water Trip Blank	18-Mar-2024	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050
	16-Aug-2024	< 0.10	< 0.10	< 0.0075	< 0.10	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0075	< 0.0085	< 0.020	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.050	< 0.10	< 0.050	< 0.0085	< 0.020	< 0.020	< 0.10	< 0.050
	10-Sep-2024	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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Lab File Number	Lab Sample ID	Sample Name	Test Affected	Deviation	Root Cause	Interpretation
C419662	CLA967	AEMP-DS-09	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CLA968	AEMP-DS-05				
C420367	CLE179	AEMP-DS-04	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CLE180	AEMP-Dup 1				
C419882	CLB881	AEMP-DS-06	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CLB882	AEMP-US-01				
C419865	CLB752	AEMP-US-02	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CLB753	AEMP-US-03				
C455339	CRU216	AEMP-US-04	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Late Delivery	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
C455335	CRU203	AEMP-US-02	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CRU204	AEMP-US-01				
C454939	CRR470	AEMP-DS-06	Nitrite;	Analyzed past hold times	Samples required reanalysis	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CRR483	AEMP-DS-07	Nitrate+Nitrite;			
C455387	CRU555	AEMP-DS-09	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CRU556	AEMP-US-03				
C455364	CRU337	AEMP-DS-03	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CRU338	AEMP-US-05				
C455358	CRU297	AEMP-DS-08	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CRU298	AEMP-DS-05				
C455346	CRU231	AEMP-DS-01	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
C464059	CTQ876	AEMP-DS-01	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CTQ877	AEMP-Dup 1				
C464054	CTQ775	AEMP-US-05	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CTQ776	AEMP-DS-05				
C463995	CTQ431	AEMP-US-02	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CTQ432	AEMP-DS-08				
C464061	CTQ878	AEMP-DS-02	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CTQ879	AEMP-US-01				

Lab File Number	Lab Sample ID	Sample Name	Test Affected	Deviation	Root Cause	Interpretation
C463963	CTQ351	AEMP-DS-04	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
			Zinc	Duplicate RPD above control limits	Non-homogeneous	Increased uncertainty in result. Concentration exceeds guideline and upper control limit (UCL) but is within historical ranges for the sample location. Increased uncertainty does not alter the interpretations within the report.
	CTQ352	AEMP-DS-09	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
C464046	CTQ750	AEMP-DS-03	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CTQ751	AEMP-US-04				
C473383	CVQ911	AEMP-US-03	TDS	Analyzed past hold time	Re-analysis required	Increased uncertainty in result. Result is consistent with historical ranges. Increased uncertainty does not alter the interpretation of results presented.
	CVQ913	AEMP-DS-02	Various aPAHS	Duplicate RPD above control limits	Non-homogeneous	Several aPAHs were above detection in the parent sample and below in the lab duplicate. Results from passive diffusion bag sample will be compared with semi-permeable membrane sample results.
C473367	CVQ853	AEMP-DS-01	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CVQ854	AEMP-Dup1				
C473374	CVQ884	AEMP-US-04	Nitrite; Nitrate+Nitrite; Orthophosphate; Turbidity, True Colour	Analyzed past hold times - limited shipping options.	Lab Error	These are not site KIPs. Increased uncertainty does not alter the interpretation of results presented.
	CVQ885	AEMP-DS-04				
			Nickel	Duplicate RPD above control limits	Non-homogeneous	Result is below guidelines and UCL and is consistent with historical ranges. Uncertainty does not alter the interpretation of the results presented.
C474360	CVW175	AEMP-US-01	True Colour	Analyzed past hold times - limited shipping options.	Lab Error	True colour is an indicator and not a parameter of concern
	CVW176	AEMP-US-02				
	CVW177	AEMP-DS-05				
C474363	CVW281	AEMP-DS-03	True Colour	Analyzed past hold times - limited shipping options.	Lab Error	True colour is an indicator and not a parameter of concern
	CVW282	AEMP-DS-08				
	CVW283	AEMP-DS-09				

Appendix C. Small-bodied Fish Sampling Laboratory Certificates of Analysis

Enzyme and Protein Assay

Fish Cytochrome P450 1A1(CYP1A1) and Total Protein

Zhongzhi Chen
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Report Prepared for
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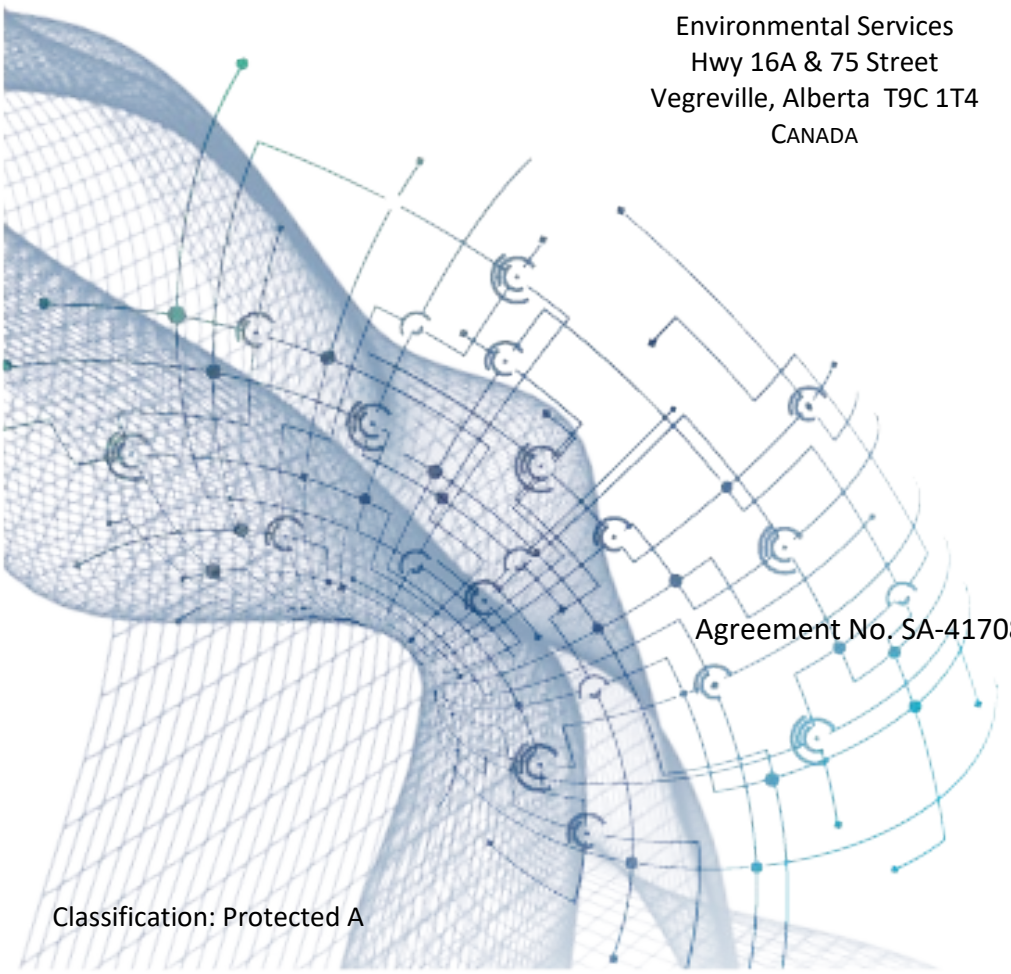

CONFIDENTIAL

Agreement No. SA-417085-54419-24200_PO7001056503

February 18, 2025

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REPORT REVIEW AND APPROVAL

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1.0 INTRODUCTION AND OBJECTIVES

This is the second year of a five-year project, following the previous agreement (no. SA-417085-47621-23030_PO7001054860). The objective of this project was to quantify fish cytochrome P450 1A1 (CYP1A1) and total protein in a collection of slimy sculpins (*Cottus cognatus*) liver samples.

Worley (Advisian) submitted 60 raw slimy sculpin liver samples for analysis at the end of September 2024. Triploid brook trout (*Salvelinus fontinalis*) liver samples (13 samples) were also provided to InnoTech for preliminary testing, method establishment, and verification in 2023/24 and continue to be used as internal controls. The fish cytochrome P450 1A1 (CYP1A1) enzyme-linked immunosorbent assay (ELISA) kits were procured and shipped to InnoTech Alberta, Vegreville by Worley at the end of September 2024. A new Pierce™ BCA (Bicinchoninic acid) Protein Assay kit was purchased by InnoTech in late January 2025. Additional details, including Chain of Custody (COC) and packing slips, can be found in the Appendices. Samples were stored at -80 ˚C until analyses could be completed.

All the samples weighed more than 25 mg, with 45 samples more than 50 mg and 15 samples more than 100 mg. During analysis, one slimy sculpin sample (AEMP-FS-02-23) was observed to have a presumptive tumor (Figure 1). This observation was confirmed with the client. Therefore, only grossly normal liver tissue was collected for analysis. Ultimately, 60 slimy sculpin liver samples were analyzed.

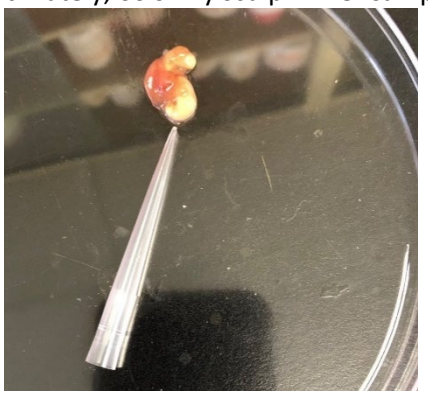

Figure 1. Slimy sculpin sample AEMP-FS-02-23

2.0 EXPERIMENTAL

2.1 SAMPLE PREPARATION

As in 2024, samples were prepared as per CUSABIO's instruction for tissue homogenates (CUSABIO, 2023). Briefly, liver samples were transferred from cryovials to 1.5 mL microcentrifuge tubes and homogenized in 1X phosphate-buffered saline (PBS, pH 7.4, sterile-filtered, Sigma-Aldrich) using a pestle and cordless motor (1 mL PBS per 100 mg tissue). After homogenization, samples were stored at -20 ˚C overnight. The following day, samples were allowed to thaw and immediately refrozen at -20 ˚C overnight to further disrupt cell membranes. On the third day, the homogenates were again thawed and centrifuged for 5 minutes at 5000 x g and 4 °C. The supernatant from each homogenate was removed for ELISA testing immediately after centrifugation. Aliquots of supernatant (10 µL minimum volume) were stored at -20 ˚C until the total protein assay could be conducted.

Potentially, the CYP1A1 assay could potentially be conducted on an S-9 fraction collected from homogenized liver samples as described in the *Protocols for measuring mixed function oxygenases of fish liver* (Hodson et al., 1991), because most (45/60) of the slimy sculpin samples were more than 50 mg and may yield S-9 fractions of sufficient volume for testing. However, the CYP1A1 assay was conducted as per CUSABIO's instruction for tissue homogenates to maintain procedural consistency with the 2024 analyses.

2.2 FISH CYTOCHROME P450 1A1 (CYP1A1)

Fish cytochrome P450 1A1 (CYP1A1) concentration was determined using a commercial ELISA kit (CUSABIO, catalogue number CSB-EL006395FI), which was sourced from a local distributor (CEDARLANE Corporation, www.cedarlanelabs.com). The kit uses a mouse monoclonal antibody to detect the CYP1A1 target described at https://www.uniprot.org/uniprotkb/Q6JZS3/ (Personal communication, Shaun Duan, Wuhan Huamei Biotech Co., Ltd., February 23, 2024). The analytical standard for the assay is a recombinant protein produced by Chinese hamster ovary (CHO) cells. The kit claims a detection range of 75 to 1,200 pg/mL.

The assay was conducted as per the manufacturer's protocol (CUSABIO, 2023). A correction (reference) wavelength of 655 nm was used to measure background absorbance and subtracted from the absorbance of 450 nm to get "true" absorbance values using a Benchmark microplate reader (Catalog Number: 170-6850, BIO-RAD). Samples were assayed in triplicate unless otherwise specified.

2.3 TOTAL PROTEIN ASSAY

Samples were assayed for total protein in triplicate using the Pierce™ BCA Protein Assay Kits from ThermoFisher (Catalog Number A55865, 500 mL), as per the manufacturer's instruction (ThermoFisher Scientific, 2023).

The microplate version of the procedure (25 µL sample per microplate well) was used to accommodate the small sample biomass. This procedure resulted in a detection range of 20–2,000 µg/mL. Although lower volumes (10 µL sample per microplate well) can be used, preliminary trials indicated smaller volumes resulted in lower test precision and compressed the detection range to 125–2,000 µg/mL. Absorbance was measured at 540 nm on a Benchmark microplate reader. Preliminary trials with triploid brook trout liver samples validated a prolonged (2-hour) incubation time. To facilitate the CYP1A1 assay, 1x PBS (pH 7.4) was used to homogenize liver samples.

3.0 RESULTS

No.	Client Sample ID	CYP1A1 (pg/mL)	Total protein (BCA, ug/mL)	Normalized (pg/mg protein)	Note (ELISA)
1	AEMP-FS-01-1	59	4671	13	#
2	AEMP-FS-01-3	60	7084	8	#
3	AEMP-FS-01-4	63	6903	9	#
4	AEMP-FS-01-5	64	7147	9	#
5	AEMP-FS-01-6	77	7484	10	
6	AEMP-FS-01-8	87	6506	13	
7	AEMP-FS-01-9	75	7987	9	
8	AEMP-FS-01-10	87	5530	16	
9	AEMP-FS-01-14	84	7587	11	
10	AEMP-FS-01-15	74	7007	11	#
11	AEMP-FS-01-17	107	7342	15	
12	AEMP-FS-01-18	96	7322	13	
13	AEMP-FS-01-19	85	7316	12	
14	AEMP-FS-01-20	77	6500	12	
15	AEMP-FS-01-21	72	7178	10	#
16	AEMP-FS-01-22	98	7995	12	
17	AEMP-FS-01-25	74	7710	10	#
18	AEMP-FS-01-28	90	7583	12	
19	AEMP-FS-01-29	130	6263	21	
20	AEMP-FS-01-30	116	7320	16	
21	AEMP-FS-02-1	110	7500	15	
22	AEMP-FS-02-2	122	6592	19	
23	AEMP-FS-02-3	105	5853	18	
24	AEMP-FS-02-4	123	4465	28	
25	AEMP-FS-02-5	79	5904	13	
26	AEMP-FS-02-7	73	5794	13	#
27	AEMP-FS-02-8	93	6635	14	
28	AEMP-FS-02-9	78	6529	12	
29	AEMP-FS-02-10	82	5969	14	
30	AEMP-FS-02-11	87	6782	13	
31	AEMP-FS-02-12	72	5925	12	#
32	AEMP-FS-02-13	82	5542	15	
33	AEMP-FS-02-15	79	7262	11	
34	AEMP-FS-02-16	79	7292	11	
35	AEMP-FS-02-18	79	4655	17	

No.	Client Sample ID	CYP1A1 (pg/mL)	Total protein (BCA, ug/mL)	Normalized (pg/mg protein)	Note (ELISA)
36	AEMP-FS-02-20	81	5205	16	
37	AEMP-FS-02-21	98	5775	17	
38	AEMP-FS-02-22	98	5951	16	
39	AEMP-FS-02-23	79	6529	12	
40	AEMP-FS-02-24	82	5511	15	
41	AEMP-FS-03-1	68	7510	9	#
42	AEMP-FS-03-2	97	5355	18	
43	AEMP-FS-03-3	97	6567	15	
44	AEMP-FS-03-4	99	7243	14	
45	AEMP-FS-03-5	105	6268	17	
46	AEMP-FS-03-6	100	6100	16	
47	AEMP-FS-03-8	102	5797	18	
48	AEMP-FS-03-10	101	6531	15	
49	AEMP-FS-03-11	97	6865	14	
50	AEMP-FS-03-13	107	6069	18	
51	AEMP-FS-03-14	92	6536	14	
52	AEMP-FS-03-15	90	7561	12	
53	AEMP-FS-03-17	98	6453	15	
54	AEMP-FS-03-18	86	7729	11	
55	AEMP-FS-03-20	99	7158	14	
56	AEMP-FS-03-21	84	7727	11	
57	AEMP-FS-03-26	94	7254	13	
58	AEMP-FS-03-27	92	8008	12	
59	AEMP-FS-03-28	86	8205	10	
60	AEMP-FS-03-29	92	7387	12	

Below detection limit (75 pg/mL) for the CYP1A1 measurements.

4.0 RECOMMENDATIONS

The previous Pierce BCA Protein Assay Kit (Catalog Number 23227, 500 mL) obtained in January 2024 is guaranteed to be fully functional for 12 months from the date of shipment if stored as recommended (room temperature). Considering the kit is about to expire during the 2025 experiments, a new kit was purchased by InnoTech. To test if a kit that expired for around 6 weeks is still functional, a preliminary experiment was conducted by comparing standard curves using new (Catalog Number A55865) and old (Catalog Number 23227) BCA Protein Assay Kit, as well as one triploid brook trout liver sample (Table 1). The optical density (OD) results indicated no apparent discrepancies between the two kits.

Table 1. Standard curve and sample absorbance (OD value) new (Catalog Number A55865) and old (Catalog Number 23227) BCA Protein Assay Kit.

Standard or Sample (ug/mL)	Absorbance (OD value) - New Kit			Absorbance (OD value) - Old Kit		
	Average	Std	CV	Average	Std	CV
2000	3.205	0.016	0.5%	3.122	0.014	0.4%
1500	2.513	0.018	0.7%	2.563	0.065	2.6%
1000	1.721	0.121	7.0%	1.778	0.061	3.5%
750	N/A	N/A	N/A	1.395	0.045	3.3%
500	0.991	0.071	7.2%	1.010	0.035	3.5%
250	0.539	0.021	4.0%	0.544	0.013	2.3%
125	0.305	0.016	5.3%	0.344	0.021	6.0%
0	0.000	0.010	N/A	0.000	0.001	N/A
EDBKTR24	0.798	0.016	2.0%	0.815	0.009	1.1%

N/A: Not Available; Std: Standard Deviation; CV: Coefficient of Variation

While triploid brook trout liver samples are currently used as an internal control to ensure inter-assay precision (precision between assays), no positive control was included as no commercial fish CYP1A1 for any fish species was readily available. Additional studies could explore using liver samples from fish exposed to aryl hydrocarbon receptor (AhR) agonists (e.g., β-Naphthoflavone) as positive controls. While it is understood that wild-caught slimy sculpin is an ideal option to check against false negatives, due to technical and logistics challenges, a standard model fish could be investigated for the next year. Potentially, Nautilus Environmental (Nautilus) could conduct a 96-hour static-renewal exposure to β-naphthoflavone (βNF) and a methanol solvent control on rainbow trout (*Onchorhynchus mykiss*) (Detailed proposal from Nautilus attached). Literature indicated that βNF has been used as an AhR agonist to elucidate its effect on Cyp1A1 expression in embryos of transgenic cytochrome P450 1A1 (cyp1a) reporter zebrafish (Kim et al., 2013). In addition, βNF, a model inducer, has been used as a positive control for ethoxyresorufin O-deethylase (EROD) assays of rainbow trout (Hodson et al., 1996). βNF is also selected due to the ease of sourcing and non-hazardous feature (b-Naphthoflavone = 98 6051-87-2 (sigmaaldrich.com)). A final concentration of 10 µg/L βNF with 100 µL/L methanol will be applied as per the literature (Hodson et al., 1996)(Burridge and Boudreau, 2011). Assuming the liver-to-body weight ratio is 1-2%, ten organisms (1 – 3 g each, ideally approximately 2.5 g each) could be exposed per treatment. Lab and solvent control exposure could also be conducted as a best practice to check against false

positives. Following exposure, fish will be dissected, livers removed, placed in cryovials, weighed, and flash frozen. Samples will be collected and immediately shipped on dry ice to InnoTech.

It is anticipated that fish liver subcellular fractions (mitochondrial homogenate supernatant (S-9 fraction) and microsomes) produce higher enzyme activities compared to the current tissue homogenates preparation method (Shen et al., 2016). Since 10 samples were found below the detection limit of enzyme activity, raising the baseline in the ELISA assay may be desirable to improve detection sensitivity and ease data interpretation. Should sufficient volume be obtained in future years, assays with subcellular fractions could be explored and compared to the results of the current method.

5.0 REFERENCES

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ThermoFisher Scientific, 2023. *Pierce ™ BCA Protein Assay Kit with Dilution-Free ™ BSA Protein Standards, Multichannel Pipette Compatible*.

6.0 APPENDICES

Innotech Alberta C26, PO Box 4000, Hwy 16A and 75 St, Vegreville, AB, T9C 1T4 Ph: (780) 632-8238	Chain of Custody (COC) for LA-ICP-MS Analysis

Invoicing		Reporting (if different from Invoicing)	
Project Number: 417085-54419-24200			
Company Name:	Worley Consulting	Company Name:	
Contact Name:	Graham Young	Contact Name:	
Address:	49 Quarry Park Blvd	Address:	
City, Province:	Calgary, Alberta	City, Province:	
Postal Code:	T2C 5H9	Postal Code:	
Phone:	403-968-1545	Phone:	
Email:	stacy.gibb@worley.com; SSCAPinv-AMERICAS@worley.com	Email:	canada.chemistry@worley.com; graham.young@worley.com

Sample Analysis Requested

	Sample Identification:	Sample Type: Species	Sample type
✓ 1	AEMP-FS-01-1	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 2	AEMP-FS-01-3	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 3	AEMP-FS-01-4	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 4	AEMP-FS-01-5	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 5	AEMP-FS-01-6	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 6	AEMP-FS-01-8	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 7	AEMP-FS-01-9	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 8	AEMP-FS-01-10	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 9	AEMP-FS-01-14	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 10	AEMP-FS-01-15	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 11	AEMP-FS-01-17	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 12	AEMP-FS-01-18	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 13	AEMP-FS-01-19	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 14	AEMP-FS-01-20	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 15	AEMP-FS-01-21	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 16	AEMP-FS-01-22	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 17	AEMP-FS-01-25	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 18	AEMP-FS-01-28	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 19	AEMP-FS-01-29	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 20	AEMP-FS-01-30	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA

Sample(s) Released By: Graham Young	Sample(s) Received By:
Signature: Graham Young	Signature:
Date Sent: 24-Sep-21	Date Received:
Sample(s) Returned to Client By: please Cc invoice graham.young@worley.com. Hold analysis until PO is in place	Shipping Conditions:
	Shipping Container:
Signature:	Date Sent:

Innotech Alberta C26, PO Box 4000, Hwy 16A and 75 St, Vegreville, AB, T9C 1T4 Ph: (780) 632-8238	Chain of Custody (COC) for LA-ICP-MS Analysis

Invoicing		Reporting (if different from Invoicing)	
Project Number: 417085-54419-24200			
Company Name:	Worley Consulting	Company Name:	
Contact Name:	Graham Young	Contact Name:	
Address:	49 Quarry Park Blvd	Address:	
City, Province:	Calgary, Alberta	City, Province:	
Postal Code:	T2C 5H9	Postal Code:	
Phone:	403-968-1545	Phone:	
Email:	stacy.gibb@worley.com; SSCAPinv-AMERICAS@worley.com	Email:	canada.chemistry@worley.com; graham.young@worley.com

Sample Analysis Requested

Sample Identification:		Sample Type:	
		Species	Sample type
✓ 1	AEMP-FS-02-1	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 2	AEMP-FS-02-2	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 3	AEMP-FS-02-3	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 4	AEMP-FS-02-4	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 5	AEMP-FS-02-5	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 6	AEMP-FS-02-7	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 7	AEMP-FS-02-8	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 8	AEMP-FS-02-9	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 9	AEMP-FS-02-10	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 10	AEMP-FS-02-11	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 11	AEMP-FS-02-12	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 12	AEMP-FS-02-13	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 13	AEMP-FS-02-15	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 14	AEMP-FS-02-16	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 15	AEMP-FS-02-18	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 16	AEMP-FS-02-20	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 17	AEMP-FS-02-21	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 18	AEMP-FS-02-22	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 19	AEMP-FS-02-23	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 20	AEMP-FS-02-24	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA

Sample(s) Released By: Graham Young	Sample(s) Received By:
Signature: Graham Young	Signature:
Date Sent: 24-Sep-24	Date Received:
Sample(s) Returned to Client By: please Cc invoice graham.young@worley.com. Hold analysis until PO is in place	Shipping Conditions:
	Shipping Container:
Signature:	Date Sent:

Innotech Alberta C26, PO Box 4000, Hwy 16A and 75 St, Vegreville, AB, T9C 1T4 Ph: (780) 632-8238	Chain of Custody (COC) for LA-ICP-MS Analysis

Invoicing		Reporting (if different from Invoicing)	
Project Number: 417085-54419-24200			
Company Name:	Worley Consulting	Company Name:	
Contact Name:	Graham Young	Contact Name:	
Address:	49 Quarry Park Blvd	Address:	
City, Province:	Calgary, Alberta	City, Province:	
Postal Code:	T2C 5H9	Postal Code:	
Phone:	403-968-1545	Phone:	
Email:	stacy.gibb@worley.com; SSCAPinv-AMERICAS@worley.com	Email:	canada.chemistry@worley.com; graham.young@worley.com

Sample Analysis Requested

Sample Identification:		Sample Type:	
		Species	Sample type
✓ 1	AEMP-FS-03-1	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 2	AEMP-FS-03-2	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 3	AEMP-FS-03-3	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 4	AEMP-FS-03-4	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 5	AEMP-FS-03-5	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 6	AEMP-FS-03-6	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 7	AEMP-FS-03-8	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 8	AEMP-FS-03-10	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 9	AEMP-FS-03-11	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 10	AEMP-FS-03-13	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 11	AEMP-FS-03-14	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 12	AEMP-FS-03-15	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 13	AEMP-FS-03-17	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 14	AEMP-FS-03-18	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 15	AEMP-FS-03-20	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 16	AEMP-FS-03-21	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 17	AEMP-FS-03-26	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 18	AEMP-FS-03-27	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 19	AEMP-FS-03-28	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA
✓ 20	AEMP-FS-03-29	SLSC	Liver, CYP1A1 ELISA + Total Protein by BCA

Sample(s) Released By: Graham Young	Sample(s) Received By:
Signature: Graham Young	Signature:
Date Sent: 24-Sep-24	Date Received:
Sample(s) Returned to Client By: please Cc invoice graham.young@worley.com. Hold analysis until PO is in place	Shipping Conditions:
	Shipping Container:
Signature:	Date Sent:

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Web Order #	2401042

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Worley Consulting (70029)

Email: graham.young@worley.com

Phone: 403-968-1545

Order Date: 19 Sep 2024

Invoice Date: 01 Oct 2024

PO Number: VISA

Payment: Visa
xxxx-xxxx-xxxx-6328
Graham M Young - Exp: 06/2028

Billing:

Worley Consulting
49 Quarry Park Blvd
CALGARY, AB, CANADA, 403-968-1545
T2C 5H9

Shipping:

Worley Consulting
Hwy 16A and 75 St
Vegreville, AB, CANADA, 7806031897 Sean Coffey
T9C1T4

Qty	Description	Price	Total
1.00	**Fish Cytochrome P450 1A1(CYP1A** **Product Code:** CSB-EL006395FI-5 **Supplier: N/A** **Size:** N/A	~~$4563.00~~ (LESS 5.00%) $228.15 $4334.85	$4334.85
	Save 5.00% on this item . Quote #: 159217 . . carrol.porter-dovey@cedarlanelabs.com 09/19/2024 . . ++++++++++++++++ office will be closed on Monday, September 30/24 ++++++++++++++++++ . . 09/26/2024 CPORTER-DOVEY		

Merchandise total	**$4334.85**
Shipping (Freight Charge)	**$39.99**
Subtotal (CAN)	**$4374.84**
GOODS AND SERVICES TAX	**$218.74**
Final total (CAN)	**$4593.58**

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AB, CANADA
403-968-1545
T2C 5H9

Shipping:

Innotech Alberta
Hwy 16A and 75 St
Vegreville
AB, CANADA
7806031897 Sean Coffey
T9C1T4

Order Date	Purchase Order Number	Terms	Funds	Ship Via
9/19/2024	VISA	PREPAID	CAN	FEDEX

Order Qty	Stock Code	Price	Unit Discount	Net Unit Price	Line Total
1.00	**CSB-EL006395FI-5** **Fish Cytochrome P450 1A1(CYP1A1) ELISA kit** **5X96T** Save 5.00% on this item	4563.00	**228.15** **(5%)**	4334.85	4334.85
	FREIGHT CHARGES				39.99
	. Quote #: 159217 . . carrol.porter-dovey@cedarlanelabs.com 09/19/2024				

SubTotal	Shipping Charges	Service Fees	PST	GST	Total
4334.85	39.99	0.00	0.00	218.74	4593.58

CLAIMS: Please report any discrepancies immediately. Authorized returns must be made within 30 days. Thank you.

For Cedarlane's Terms and Conditions of Purchase and Sale, please see www.cedarlanelabs.com/TermsAndConditions

In CANADA: 4410 Paletta Court, Burlington, ON L7L 5R2
Toll Free: 1-800-268-5058 . ph: (289) 288 0001 . fax: (289) 288 0020

CPORTER-DOVEY

July 12, 2024

SUBJECT: TOXICITY TESTING COST ESTIMATE Q2324048

To	Zhongzhi Chen Jim Davies	*From*	Melanie Gallant, Ph.D., DABT Leila Oosterbroek, P.Biol.
Affiliation	InnoTech Alberta	*Tel*	403-253-7121
e-mail	Zhongzhi.Chen@innotechalberta.ca Jim.Davies@innotechalberta.ca	*e-mail*	melanie@nautilusenvironmental.ca leila@nautilusenvironmental.ca

Nautilus Environmental Company Inc. (Nautilus) is pleased to provide InnoTech Alberta (InnoTech) with the following cost estimate for testing (Table 1). This cost estimate is based on a series of assumptions outlined below with the best available information to date. The cost estimate will only be valid to the end of 2025; any major changes to the approach or requested testing will invalidate the cost estimate. We are accredited by the Canadian Association for Laboratory Accreditation (CALA) to ISO 17025 standards for tests listed in our scope of accreditation.

Innotech is interested in conducting an exposure with slimy sculpin (*Cottus cognatus*). A cost estimate is unable to be provided for the acquisition of the non-routine species, slimy sculpin. At this time, it is unknown whether organisms can be sourced from a hatchery or if field collection will be required. Nautilus does not offer field collection services, which would be the responsibility of the client if a hatchery source cannot be identified. Permit requirements for field collected vs hatchery sourced organisms may differ. The quote provided assumes a hatchery source, which is our primary experience with permit applications. Furthermore, permit applications can take three months or more and are not guaranteed; this should be accounted for in lead times.

As discussed with InnoTech, Nautilus recommends a minimum laboratory acclimation period of two weeks before test initiation. The acclimation period may be extended beyond two weeks if the organism adjustment to laboratory conditions is challenging (i.e., high mortality in the culture). The size of the organisms upon arrival at the laboratory remains unknown. Additional fees may be applicable if organisms must be cultured beyond the acclimation period to reach the required testing size. Slimy sculpin prefer cold waters and may have relatively slow grow rates; depending on the size of the organisms upon arrival, the time required to culture the organisms is unknown. Nautilus will not begin the permit application process or culturing the organisms without formal approval of the project.

Once the organisms have been acquired and acclimated to the laboratory conditions, a 96-hour static-renewal exposure to β-naphthoflavone (concentration to be specified by the client), a methanol solvent control and a standard laboratory control will be conducted with slimy sculpin

(*Cottus cognatus*). Ten organisms (approximately 2.5 g each) will be exposed per treatment. Following the exposure, fish will be dissected and livers removed, placed in cryovials, weighed, and flash frozen. Samples will be collected and immediately shipped on dry ice to InnoTech. The following assumptions pertaining to the exposure and experimental design apply to the cost estimate outlined below:

- Assumes that the organisms used for testing are approximately 2.5 g each. Larger organisms would require larger volumes, which leads to increased labour associated with culturing and testing. Smaller organisms could pose increased challenges with liver dissections.
- Assumes that the experimental design (i.e., duration, number of treatments, number of organisms per treatment, number of replicates, etc.) are the same as for the rainbow trout quote (Q2324046).
- Upon formal approval of the project from InnoTech, the mobilization fees (i.e., permit application and facility preparation) will be incurred by the client regardless of the success of the permit application, which is outside of Nautilus' control.
- Between organism receipt at the facility and test initiation, weekly culturing fees will be incurred. Open lines of communication will be maintained with InnoTech during the culturing process to provide updates on the performance of the culture. InnoTech will be given the opportunity to decide if testing should proceed; if so, the remaining charges will apply.

Nautilus will provide a memo documenting the procedures and append the bench sheets with information on water quality and daily observations of survival. No statistical analyses, reference toxicant data, or analytical sampling is included in this cost estimate.

Thank you for considering our laboratory and we look forward to providing you the service you require. Please contact us if you have any questions.

Sincerely,

Melanie Gallant

Melanie Gallant, Ph.D., DABT
Environmental Toxicologist

Leila Oosterbroek, P.Biol.
Environmental Scientist

Table 1. Toxicity test prices (valid until December 31, 2025).

Item / Task	Price per item	Number of items	Total Price (CAD)
Mobilization			
Permit application, species specific husbandry research, facility preparation	$7,500	1	$7,500
Toxicity testing			
96-hour static renewal slimy sculpin exposure[1,2]	$1,000	3	$3,000
Additional costs			
Culturing fee per week[3]	$1,400	2-12	$2,800 – 16,800
Dissections and sample processing	$200	30	$6,000
Supplies and shipping[4]	$4,000	1	$4,000
Project management, study plans, and reporting	$5,000	1	$5,000
Total costs			**$28,300 – $42,300**

[1] Cost per treatment (i.e. laboratory control, solvent control, β-naphthoflavone); daily renewal

[2] Full costs will apply regardless of testing outcome/success and control fish performance.

[3] Costs may be pro-rated if culturing is unsuccessful or takes less time than anticipated.

[4] Includes costs associated with acquisition of dry ice, species specific culture equipment and express shipment (via Jazoo). Costs may vary.

TERMS AND CONDITIONS

- Cost excludes applicable taxes.
- Costs do not include collection or transportation of samples to the laboratory.
- Testing must be scheduled in advance of sample collection. Required lead times will vary.
- Samples may be redirected (at the time of sample collection or on arrival) to one of Nautilus' alternate CALA accredited ecotoxicity testing locations depending on resource availability and respecting sample storage times.
- There will be a 50% surcharge for tests that are initiated on weekends and holidays upon client request.
- With the exception of acute tests with rainbow trout, *Daphnia magna*, and *Vibrio fischeri* a fee may be applied if samples are cancelled and/or not received at the laboratory when scheduled to compensate for the cost of obtaining and preparing the test organisms. Please confirm with your client manager if this fee is applicable.
- Sample containers can be provided upon request.
- Shipping of sampling supplies to the site are not included for remote locations.
- Replacement for lost or misplaced sampling containers and supplies will be charged back at cost (+ courier/shipping charges); minimum $100 replacement fee will apply.
- Cleaning or replacement fees may apply for returned containers that are permanently marked or damaged.
- A waste disposal and sample handling fee will apply to samples that are submitted but not tested.
- In the event a routine toxicity test does not meet the "test validity criteria" (as stipulated in the appropriate method reference), Nautilus' liability is limited to repeating the analysis at no additional cost if the test can be initiated within the allowable sample hold time, or, if the test cannot be initiated within the allowable sample storage time, repeating the test on a fresh sample. Nautilus shall not be responsible for the cost of preparing, collecting, packaging or shipping the fresh sample.
- Limitation of Liability: The CLIENT **(InnoTech)** releases Nautilus Environmental Company Inc. (Nautilus) from any liability and agrees to defend, indemnify and hold Nautilus harmless from any and all claims, damages, losses, and/or expenses, direct and indirect, or consequential damages, including but not limited to lawyer's fees and charges and court and arbitration costs, arising out of, or claimed to arise out of, the performance of the services, excepting liability arising from the sole negligence of Nautilus. It is further agreed that the total amount of all claims the CLIENT may have against Nautilus under these Terms and Conditions, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, shall be strictly limited to the amount of service and professional fees paid to Nautilus for the services. No claim may be brought against Nautilus more than one (1) year after the cause of action arose. As the CLIENT's sole and exclusive remedy under these Terms and Conditions any claim, demand or suit shall be directed and/or asserted only against Nautilus and not against any of Nautilus's employees, officers or directors.
- Submission of samples assumes acceptance of these Terms and Conditions.
- Payment can be made by cheque or direct deposit.
- Email: accounting@nautilusenvironmental.ca
- Payment term: Net Due in 30 days.

TERMS AND CONDITIONS

The attached document entitled "Routine Testing Agreement" (hereafter referred to as the “Agreement”) is subject to the following Terms and Conditions, unless otherwise specified on the Agreement:

1. InnoTech Alberta will perform the Services in accordance with normal professional standards. Commencement of the Services shall constitute acceptance of these terms and conditions.
2. The delivery time for performance of the Services (as set out on the front page of this Agreement) is approximate and may be changed at any time by InnoTech Alberta giving written notice to the Client.
3. InnoTech Alberta will exercise due care and proficiency in testing items submitted by a Client. InnoTech Alberta shall not be responsible for any damage, which is a natural, necessary, or foreseeable result of any testing procedure, and InnoTech Alberta shall not be liable to the Client for any damage or loss caused to the item being tested or for any damage, loss or expense caused by any delay in carrying out the test, unless and to the extent that such damage, loss or expense is a direct result from InnoTech Alberta’s negligence or willful misconduct
4. For the purposes of this Agreement, “Intellectual Property” means all information, data, artistic and literary works, concepts, designs, processes, software, algorithms and inventions, including, without limitation, those that could be the subject of patent, copyright, industrial design, trade secret or other forms of protection. Intellectual Property which was owned by either InnoTech Alberta or the Client prior to the signing of this Agreement remains the property of that party.
5. For the purposes of this Agreement, “Test Results” means the conclusions, information, results or products including compilations, notes, data and reports, but does not include Intellectual Property developed by or utilized by InnoTech Alberta in the fulfillment of its obligations pursuant to this Agreement (e.g. improved research technologies, testing standards, process and improvements to InnoTech Alberta’s previously owned Intellectual Property. All Test Results shall be owned by the Client.
6. All data, reports and other information relating to the Services shall be treated by InnoTech Alberta as the confidential property of the Client, and InnoTech Alberta will use reasonable efforts to ensure that its employees, contractors and agents will not disclose the same to any other person, firm or corporation during the term of this Agreement and for a period of two (2) years after the date of termination of the Agreement, except as required to perform the Services. The obligation of confidentiality set out herein shall not apply to any information that was in InnoTech Alberta’s possession prior to receipt from the Client or which is or becomes part of the public domain through no act or failure on the part of InnoTech Alberta. The obligation of confidentiality set out in this Section shall not prevent the disclosure of information to any level of government having jurisdiction to make lawful demand therefor, or required to be disclosed by any applicable law. Any records required to be maintained by InnoTech Alberta pursuant to this Agreement are subject to the protection and access provisions of the *Freedom of Information and Protection of Privacy Act* (Alberta).
7. The reported results of any InnoTech Alberta tests or evaluations performed on samples or items provided by the Client shall be interpreted as being specific to the sample or item tested. InnoTech Alberta makes no representation that any similar or related untested samples or items would produce the same results.
8. The Client shall not use InnoTech Alberta’s name in any advertising material, sale offer, news releases, public statements or announcements, whether written or oral relating to the Services or the results thereof, without the prior written consent of InnoTech Alberta, which consent may be withheld for any reason.
9. Records, test data, reports and samples, except where shipped to the Client after completion of the Services shall be retained by InnoTech Alberta according to InnoTech Alberta’s approved Records Retention and Disposition Schedule.
10. Prices quoted are in Canadian Dollars unless otherwise stated in writing and are exclusive of any provincial, municipal, harmonized sales tax, use or goods and services tax. The Client shall pay all invoices rendered by InnoTech Alberta to the Client within thirty (30) days from the date of invoice, without deduction or set-off. If the Client fails to pay any amount under this Agreement, such unpaid amount shall bear interest at a rate per month equal to one (1%) percent (or 12.6825% per annum) with interest on overdue interest at the same rate.
11. Prices quoted do not include shipping, insurance or cost of consumables. The Client shall be responsible for all costs incurred by InnoTech Alberta in collecting any item for testing and returning the item to the Client after testing and shall be responsible for all necessary incidental costs incurred by InnoTech Alberta in providing the Services. InnoTech Alberta will not be responsible for any damage or loss to items during shipping and it is the responsibility of the Client to arrange and pay for any insurance it deems necessary.
12. Any test samples or other materials supplied by the Client to InnoTech Alberta may, at InnoTech Alberta’s option, be returned by InnoTech Alberta to the Client. The Client shall:
    (a) be responsible for all costs associated with the handling, transportation and disposal of such materials;
    (b) reimburse InnoTech Alberta for any costs incurred by InnoTech Alberta associated with the handling, transportation and disposal of such materials; and
    (c) indemnify and hold InnoTech Alberta harmless from any and all claims, damages or actions associated with the handling, transportation and disposal of such materials. This indemnity shall survive this Agreement.
13. InnoTech Alberta makes no representation, warranties or conditions, either expressed or implied, statutory or otherwise and does not warrant the quality, state, merchantability or fitness for any purpose of any test results, goods or products to be delivered pursuant to this Agreement. The Client accepts the results of these Services or items tested as is, and acknowledges that any use or interpretation of the information contained is at the Client’s own risk.
14. In no event shall InnoTech Alberta be liable for any indirect or consequential damage or loss suffered by the Client, including loss of anticipated profits.
15. InnoTech Alberta’s entire liability for any loss or damage suffered by the Client related to this Agreement, any breach thereof or any acts or omissions of InnoTech Alberta, its employees or agents, shall not exceed the total amount paid by the Client to InnoTech Alberta pursuant to this Agreement.

16. The Client shall indemnify and hold harmless InnoTech Alberta from any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) that may arise out of:

    (a) any dangerous defect or content in the item being tested, whether apparent or not, which dangerous defect or content was not disclosed in writing to InnoTech Alberta by the Client at the time the item was submitted for testing;

    (b) differences between those items actually tested and items previously or subsequently produced which are purported to be identical to the item tested; or

    (c) any use of the tested item or any item incorporating the tested item, whether by the Client or a third party following its return to the Client.

    This indemnity shall survive this Agreement.

17. Each party to this Agreement shall, at its own expense and without limiting its liabilities herein, be responsible for insuring its operation in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury, and property damage including loss of use thereof. Further, the Client is responsible for insuring all owned property directly or indirectly related to this Agreement and InnoTech Alberta shall have no liability for any loss or damage to such property.

18. The Client agrees to comply with all with all relevant health, safety and security policies and procedures imposed by InnoTech Alberta, and all applicable Federal and Provincial Health and Safety Acts and Regulations and public health orders, when on InnoTech Alberta's premises. Without limiting the generality of the foregoing such health, safety and security policies and procedures include InnoTech Alberta's COVID-19 Workplace Vaccination Procedure HSE 1-1-21, as updated or amended, and any similar procedures.

19. This Agreement represents the entire agreement between the parties and shall supersede all prior agreements or understandings related to the subject matter hereof. InnoTech Alberta may assign this Agreement to an "affiliated" (as that term is defined at Section 2 of the *Business Corporations Act* (Alberta)) or successor entity on notice to the Client.

20. If a party's performance of any of its obligations under this Agreement (excepting only an obligation to pay) is delayed, rendered impossible or impractical, or prevented in whole or in part due to circumstances beyond its reasonable control, including but not limited to acts of God, war, terrorism, labour disputes, pandemics or epidemics, global health emergencies, or governmental action, that party will not be in breach of this Agreement due to the delay or failure in performance occasioned by such event.

21. In the case of a force majeure event arising under the preceding paragraph, dates or times of performance shall be extended to the extent of delays excused by this section only for the duration of the force majeure event, provided that the party whose performance is impacted provides notice as soon as practicable to the other party of the existence and nature of such delay. During the period of suspension or delay, the party claiming force majeure shall undertake reasonable commercial efforts to minimize and mitigate the extent, effect and period of any such delay or non-performance.

22. This Agreement and rights and parties thereto shall be governed by and construed according to the laws of the Province of Alberta. The parties hereby submit to the exclusive jurisdiction of the Courts of Alberta for all disputes arising out of this Agreement.

Appendix D. Small-bodied Fish Sampling Quality Assurance and Quality Control

Table D-1

Quality Control review of Whole Body Tissue Residue Analytical Results: Metals and Trace Elements

PROJECT No.: 417085-54419

Sampling Location	Date (dd-mmm-yyyy)	Sample Name	Aluminum #1 (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium #1 (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead #1 (mg/kg)	Lithium (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury #1 (mg/kg)	Molybdenum #1 (mg/kg)	Nickel (mg/kg)	Phosphorus (mg/kg)	Potassium #1 (mg/kg)	Selenium (mg/kg)	Silver #1 (mg/kg)	Sodium #1 (mg/kg)	Strontium #1 (mg/kg)	Thallium (mg/kg)	Tin #1 (mg/kg)	Titanium (mg/kg)	Uranium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
BOSWORTH CREEK SLIMY SCULPIN																																
Sample Duplicate Relative Percent Difference (RPD)																																
AEMP-FS-01-05 (Upstream)			2.7	0.004	0.269	0.391	< 0.114	< 0.049	1364	0.972	0.069	1.5	34	0.006	< 0.034	1326	1.5	0.806	0.019	1.2	8464	15267	3.7	< 0.001	2250	2.3	0.022	0.189	1.1	< 0.001	**0.05**	54
(Duplicate)			3.1	0.004	0.269	0.454	<0.114	<0.049	1322	1.3	0.097	1.4	37	0.006	<0.034	1291	1.5	0.761	0.019	1.1	8582	13609	3.5	<0.001	2327	2.1	0.022	0.228	1.3	<0.001	**0.071**	45
RPD(%)			13.8%	0.0%	0.0%	14.9%	---	---	3.1%	28.9%	**33.7%**	6.9%	8.5%	0.0%	---	2.7%	0.0%	5.7%	0.0%	8.7%	1.4%	11.5%	5.6%	---	3.4%	9.1%	0.0%	18.7%	16.7%	---	**34.7%**	18.2%
AEMP-FS-01-10 (Upstream)			17	< 0.003	< 0.215	0.554	0.152	< 0.049	1425	0.811	0.11	1.6	45	0.017	0.046	1256	2.4	0.388	0.071	0.914	8012	12276	4.7	< 0.001	2804	2.4	0.028	0.245	1.7	0.001	0.092	37
(Duplicate)			16	<0.003	<0.215	0.59	0.165	<0.049	1458	0.905	0.102	1.5	41	0.02	0.046	1278	2.5	0.408	0.071	1.2	8624	14065	4.3	<0.001	3207	2.2	0.026	0.287	1.6	0.001	0.082	36
RPD(%)			6.1%	---	---	6.3%	8.2%	---	2.3%	11.0%	7.5%	6.5%	9.3%	16.2%	0.0%	1.7%	4.1%	5.0%	0.0%	27.1%	7.4%	13.6%	8.9%	---	13.4%	8.7%	7.4%	15.8%	6.1%	0.0%	11.5%	2.7%
AEMP-FS-02-08 (Downstream)			2.1	< 0.003	< 0.215	0.314	< 0.114	< 0.049	1249	0.693	0.049	1.5	25	0.011	< 0.034	1261	1.2	0.512	< 0.001	0.474	8422	13788	3.1	< 0.001	2595	1.9	0.031	0.102	1.1	< 0.001	< 0.049	33
(Duplicate)			2.3	<0.003	<0.215	0.322	<0.114	<0.049	1382	0.687	0.049	1.4	28	0.015	<0.034	1338	1.3	0.491	<0.001	0.487	8568	12637	3	<0.001	2485	2.3	0.032	0.102	1.1	<0.001	<0.049	32
RPD(%)			9.1%	---	---	2.5%	---	---	10.1%	0.9%	0.0%	6.9%	11.3%	30.8%	---	5.9%	8.0%	4.2%	---	2.7%	1.7%	8.7%	3.3%	---	4.3%	19.0%	3.2%	0.0%	0.0%	---	---	3.1%
AEMP-FS-02-23 (Downstream)			3.7	< 0.003	0.277	0.358	< 0.114	0.066	1423	0.656	0.067	1.3	30	0.015	< 0.034	1308	1.5	0.548	0.024	0.623	8899	12284	3.7	< 0.001	2962	2.1	0.026	0.178	1.4	< 0.001	0.066	60
(Duplicate)			3.3	<0.003	0.232	0.269	<0.114	0.066	1439	0.69	0.067	1.5	27	0.015	<0.034	1346	1.5	0.47	0.02	0.65	8829	12222	4	<0.001	2904	2.4	0.027	0.198	1.1	<0.001	0.071	68
RPD(%)			11.4%	---	17.7%	28.4%	---	0.0%	1.1%	5.1%	0.0%	14.3%	10.5%	0.0%	---	2.9%	0.0%	15.3%	18.2%	4.2%	0.8%	0.5%	7.8%	---	2.0%	13.3%	3.8%	10.6%	24.0%	---	7.3%	12.5%
AEMP-FS-03-05 (Upstream)			3.4	**0.008**	< 0.215	0.603	< 0.114	< 0.049	1424	0.827	0.049	1.5	45	0.02	< 0.034	1485	2	1.2	0.014	0.345	10494	14072	3.3	< 0.001	2531	2.2	0.018	0.294	1.4	< 0.001	< 0.049	58
(Duplicate)			3.1	**0.005**	< 0.215	0.413	< 0.114	< 0.049	1352	0.647	0.051	1.5	33	0.017	< 0.034	1424	1.8	1.1	0.014	0.342	10301	14039	3.2	< 0.001	2459	1.9	0.017	0.286	1.4	< 0.001	< 0.049	63
RPD(%)			9.2%	**46.2%**	---	37.4%	---	---	5.2%	24.4%	4.0%	0.0%	**30.8%**	16.2%	---	4.2%	10.5%	8.7%	0.0%	0.9%	1.9%	0.2%	3.1%	---	2.9%	14.6%	5.7%	2.8%	0.0%	---	---	8.3%
AEMP-FS-03-18 (Upstream)			3.5	**0.005**	< 0.215	0.626	0.191	< 0.049	1507	0.717	0.06	1.8	34	0.012	< 0.034	1615	2.4	1.1	0.019	0.967	9029	15064	3.5	< 0.001	2914	2.3	0.03	0.193	1.6	**0.003**	0.077	56
(Duplicate)			4.5	**0.008**	<0.215	0.738	0.218	<0.049	1513	0.833	0.078	1.8	38	0.015	<0.034	1585	2.6	1.2	0.019	0.967	9955	16745	3.6	<0.001	3275	2.2	0.033	0.257	1.8	**0.002**	0.086	58
RPD(%)			25.0%	**46.2%**	---	16.4%	13.2%	---	0.4%	15.0%	26.1%	0.0%	11.1%	22.2%	---	1.9%	8.0%	8.7%	0.0%	0.0%	9.8%	10.6%	2.8%	---	11.7%	4.4%	9.5%	28.4%	11.8%	40.0%	11.0%	3.5%
Certified Reference Materials (CRM)																																
Sample Group 1	Mean Conc. (mg/kg)		181	0.009	13	8	4.3	0.145	2098	0.573	0.054	3.7	131	0.059	0.398	1126	1.2	0.298	0.132	0.538	6379	12451	2.2	0.151	9766	11	---	0.093	13	0.017	0.395	29
	Percent Accuracy		92	86	101	93	95	98	104	111	85	113	116	102	102	109	109	94	99	122	102	107	92	112	106	109	---	120	105	103	114	100
	Precision RPD (%)		4.2%	19.0%	4.1%	3.5%	3.6%	14.0%	3.6%	3.8%	6.6%	6.4%	5.5%	8.6%	5.2%	5.4%	4.7%	3.5%	14.0%	4.6%	4.3%	6.2%	5.9%	11.0%	4.5%	4.1%	---	13.0%	6.5%	11.0%	9.8%	7.9%
Sample Group 2	Mean Conc. (mg/kg)		184	0.009	13	8.3	4.8	0.17	2094	0.541	0.069	3.7	124	0.059	0.389	1086	1.1	0.34	0.145	0.458	6566	12235	2.5	0.141	9603	10	---	0.08	12	0.018	0.373	29
	Percent Accuracy		93	86	101	96	108	115	104	105	110	112	109	102	100	106	103	108	108	104	105	106	102	105	104	105	---	104	96	108	107	100
	Precision RPD (%)		7.2%	19.0%	4.1%	3.7%	3.1%	12.0%	4.8%	2.9%	11.0%	7.0%	3.6%	7.7%	4.2%	4.6%	9.8%	1.2%	12.0%	3.8%	3.5%	4.6%	4.6%	11.0%	4.2%	6.1%	---	19.0%	12.0%	5.1%	4.1%	5.2%
Sample Group 3	Mean Conc. (mg/kg)		186	0.014	12	8	5	0.173	1945	0.528	0.071	3.6	117	0.068	0.419	1035	1	0.313	0.156	0.457	6114	11461	2.4	0.144	9220	9.7	---	0.069	13	0.02	0.352	28
	Percent Accuracy		94	127	92	93	111	117	97	102	112	110	104	118	107	100	96	99	117	104	98	99	98	107	100	98	---	90	103	125	101	96
	Precision RPD (%)		3.6%	19.0%	9.0%	1.0%	3.6%	18.0%	7.6%	3.3%	9.7%	3.7%	4.7%	14.0%	3.8%	3.0%	7.4%	9.3%	8.4%	4.6%	3.9%	4.5%	10.0%	16.0%	4.2%	14.0%	---	18.0%	9.0%	11.0%	7.0%	3.2%
Sample Group 4	Mean Conc. (mg/kg)		191	0.012	12	8.8	5.3	0.164	2104	0.54	0.078	3.8	133	0.068	0.433	1091	1.3	0.35	0.166	0.537	6065	11630	2.6	0.15	9559	11	---	0.074	12	0.019	0.413	30
	Percent Accuracy		97	105	93	102	117	110	105	105	124	114	118	117	111	106	119	111	124	122	97	100	107	111	104	107	---	96	98	119	119	104
	Precision RPD (%)		6.4%	6.1%	9.2%	3.0%	1.7%	17.0%	4.9%	5.4%	16.0%	1.2%	5.1%	16.0%	8.1%	3.6%	9.0%	3.7%	0.0%	13.0%	3.3%	4.3%	7.1%	19.0%	4.4%	6.4%	---	18.0%	16.0%	11.0%	15.0%	6.9%
Certified Reference Value	Certified Conc. (mg/kg)		197.2	0.011	13.3	8.6	4.5	0.148	2010	0.515	0.063	3.3	113	0.058	0.391	1030	1.06	0.316	0.134	0.44	6230	11600	2.4	0.135	9200	9.87	---	0.077	12.24	0.0163	0.347	28.7
Certified Reference Range	Upper Range limit (mg/kg)		256.36	0.0154	17.29	12.04	6.3	0.1924	2613	0.6695	0.0819	4.29	146.9	0.0754	0.5083	1339	1.378	0.4108	0.1742	0.572	8099	15080	3.12	0.189	11960	12.831	---	0.1078	17.136	0.02119	0.4511	37.31
	Lower Range limit (mg/kg)		138.04	0.0066	9.31	5.16	2.7	0.1036	1407	0.3605	0.0441	2.31	79.1	0.0406	0.2737	721	0.742	0.2212	0.0938	0.308	4361	8120	1.68	0.081	6440	6.909	---	0.0462	7.344	0.01141	0.2429	20.09
Average Laboratory Bias			0.9	1.0	0.9	1.0	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.0	1.1	1.1	1.0	1.0	1.0	1.1	1.0	1.1	---	1.0	1.0	1.1	1.1	1.0

NOTES:

X

1. --- in guideline row(s) denotes no criteria for that parameter.
2. --- in detail data row(s) denotes parameter not analyzed.
3. Shading indicates that reported values result in quality control metrics greater than or equal to the applicable quality control criteria.
4. **Bold** text indicates that concentrations used to calculate relative percent difference (RPD) values greater than or equal to quality criteria are lower than five times the RDL. Reduced presion for these analyses are most likely related to low concentrations for the associated metal.
5. Quality control limits are adopted from the Guidance Manual for Environmental Site Characterization in support of Environmental and Human Health Risk Assessment: Volume 4 Analytical Methods. Published by the Canadian Council of Ministers of the Environment in 2016.
6. Superscript #1 - The RPD control limit for duplicate analyses is 40% for the associated variable rather than the standard criteria for metals which is 30%.
7. Certified reference material (CRM) used for most metals measured is DORM-5, however reference values for boron, titanium, antimony, barium, and aluminum are based on analysis of the NIST-1566b CRM.
8. Certified reference ranges for most metals measured are based on quality control limit of 70%-130% of the reference value, however, boron, titanium, silver, tin, antimony, and barium reference ranges are based on quality control limits of 60%-140%.
9. Laboratory Bias is calculated as the mean concentration reported among CRM sample groups divided by the certified reference value. Values above 1 indicate potential overestimation bias while values below 1 indicate potential underestimation bias.

Appendix E. Upstream Control Limit Development

Appendix E – Upstream / Background Dataset

As the AEMP is intended to detect changes in water quality between upstream and downstream locations, rather than to determine overall environmental health; comparison to a background (i.e., upstream) dataset is better suited to detecting change as opposed to comparison to a fixed water quality objective.

Upstream background concentrations of KIPs for the 2024 report have been compiled from previously established upstream locations into one upstream range set on a per waterbody basis (i.e., one set for the Mackenzie River and one set for Bosworth Creek).

As there is a limited dataset at this point, available data has been used as follows:

- Mackenzie River
  - Data from AEMP-US-02 (formerly AEMP-10)
    - Data from 2017 to 2024.
  - Data from AEMP-US-01 (Midway)
    - Data from 2023 to 2024
- Bosworth Creek
  - Data from former location AEMP-04
    - Data from 2017 to 2022.
  - Data from locations AEMP-US-04 and AEMP-US-05
    - Data from 2023 to 2024

Data from newly established upstream locations on each water body (starting sampling in 2023 and 2024) will be added following two years of data collection to meet data quality requirements (see below).

E.1 Calculation of Upstream Control Limits

The Background dataset will be used to calculate the Upstream Control Limits for each KIP. Upstream Control Limits will be calculated using the Shewhart (EPA 2009) control chart method outlined below, provided that the data meets the following conditions:

- The data set includes at least eight data points.
- Greater than or equal to 50 percent of data are detectable.

The dataset will be checked for the following:

- An increasing trend (determined via Mann-Kendall with modified Sen's Slope test).
- A decreasing trend (determined via Mann Kendall with modified Sen's Slope test).
- Verified outliers (removed prior to defining baseline data sets).

A trend in upstream data may be indicative of naturally occurring water quality changes and should be captured so that downstream data is compared to the natural conditions of the river.

The equations used to determine the UCL and LCL are as follows (USEPA 2009):

Equation 1: Upper and Lower Control Limit Calculation

$$UCL = \bar{x} + h \cdot s$$

$$LCL = \bar{x} - h \cdot s$$

Where:

$\bar{x} = sample\ mean\ (arithmetic)$

$s = sample\ standard\ deviation$

$h = control\ chart\ factor = 2$

$UCL = Upper\ Control\ Limit$

$LCL = Lower\ Control\ Limit$

E.1.1 Managing Data During Background Establishment

During Background data establishment, the following scenarios may occur that will require consideration in how the data is used:

- Data below the detection limits:
  - In cases where less than 50 percent of the baseline data set are detectable, the UCL is set to five times the typical RDL (as applicable) and the LCL will not be calculated (not applicable).
- Outliers:
  - An outlier is defined as a value originating from a different statistical population than the rest of the sample. Outliers have been identified using Tukey's Box Plot Method which is suitable for non-normally distributed data (USEPA 2009);
    - As the dataset is still limited, only extreme outliers identified have been removed.

- A valid reason for removing an outlier is required before it could be removed from the data set (USEPA 2009). The following are defined as valid reasons for outlier identification and removal from the dataset:
  - Anomalous concentrations recorded during the well stabilization period, defined as the time following drilling and monitoring well installation when geochemical conditions in the groundwater around the monitoring well are adjusting following the effects of drilling and well installation.
  - An error in transcription, dilution or analytical procedure, etc. that could be identified, but the error could not be corrected.
  - The value was part of a group of parameters with one-time detections that were not replicated in subsequent follow up verification sampling or any other sampling event.
  - Values for multiple parameters in a field duplicate sample were atypical relative to the parent sample and were not confirmed by subsequent monitoring results.
  - The value was a one-time detection that was more than one order of magnitude greater than the reportable detection limit.
  - One parameter reported over multiple samples from different sampling locations in one sampling event was high biased or low biased.
  - The data quality of anomalous KIP concentrations could not be verified due to historically incomplete files.
- Trends in Data:
  - Data for inclusion in the Baseline dataset will be analyzed for trends using a Mann-Kendall (Kendall 1975; Mann 1945) test. Data showing statistically significant trends may be rejected or removed from the dataset.

Trends in upstream data will be assessed on a per location basis to determine if they are indicative of wider environmental changes that should be accounted for in the Background data or if they are location specific. As upstream locations are not site-influenced, trends in upstream data would not be attributable to site related activities. Due to the lack of potential site influence, data may be added to the Background dataset before a trend is observable (data added every two years); if trends are identified after further sampling events then it data may be removed from the dataset. To account for potentially changing river conditions in upstream locations, control limits will be calculated using recent data (eight data points) and calculated using all data to assess for changing natural ranges.

Data used and associated calculations for UCL and LCL are provided in Tables E-1 through E-4.

Table E-1
Mackenzie River Control Limit Calculations: Major Ion KIPs

PROJECT No.: 417085-54419

	Calcuim	Chloride	Magnesium	Sulphate	TDS
AEMP-US-01 (Midway)	23	9.8	8.9	22	120
	30	11	9.2	37	96
	9.6	11	2.7	35	150
	24	10	8.9	28	96
	25	11	9.5	29	150
	32	11	9.8	43	180
	30	11	9.6	39	160
	28	19	10	34	160
AEMP-10/AEMP-US-02	31	7.3	8.7	38	140
	36	8.6	11	49	180
	37	8.6	11	49	170
	28	11	9.5	33	150
	30	6.2	7.6	35	170
	35	11	11	50	180
	39	9.9	11	60	230
	30	5.1	7.9	35	180
	32	6.2	8.8	52	170
	35	7.1	9.7	40	200
	30	6.3	7.6	34	130
	37	7.1	11	40	190
	33	7.5	9	42	200
	34	7.9	9.9	38	160
	25	10	9	27	150
	34	11	10	47	150
	34	9.5	10	50	180
	44	11	15	49	220
	35	11	12	34	170
	38	8.3	11	47	180
	33	8.7	10	46	180
	31	8.8	10	44	170

25%	30	7.6	8.925	34.25	150
75%	35	11	10.75	47	180
IQR	5	3.4	1.825	12.75	30
Lower Mild Boundary	22.5	2.5	6.1875	15.125	105
Upper Mild Boundary	42.5	16.1	13.4875	66.125	225
Lower Extreme Boundary	15	-2.6	3.45	-4	60
Upper Extreme Boundary	50	21.2	16.225	85.25	270

Table E-1
Mackenzie River Control Limit Calculations: Major Ion KIPs

OUTLIER REMOVED DATASET					
MEAN	32.2	9.4	9.9	40.2	165.4
2 x SD	9.3	5.1	2.9	17.0	59.6
UCL	**42**	**14.5**	**12.7**	**57**	**225**
LCL	**23**	**4.3**	**7.0**	**23**	**106**

AEMP-US-01 (Midway)	23	9.8	8.9	22	120
	30	11	9.2	37	96
		11		35	150
	24	10	8.9	28	96
	25	11	9.5	29	150
	32	11	9.8	43	180
	30	11	9.6	39	160
	28	19	10	34	160
AEMP-10/AEMP-US-02	31	7.3	8.7	38	140
	36	8.6	11	49	180
	37	8.6	11	49	170
	28	11	9.5	33	150
	30	6.2	7.6	35	170
	35	11	11	50	180
	39	9.9	11	60	230
	30	5.1	7.9	35	180
	32	6.2	8.8	52	170
	35	7.1	9.7	40	200
	30	6.3	7.6	34	130
	37	7.1	11	40	190
	33	7.5	9	42	200
	34	7.9	9.9	38	160
	25	10	9	27	150
	34	11	10	47	150
	34	9.5	10	50	180
	44	11	15	49	220
	35	11	12	34	170
	38	8.3	11	47	180
	33	8.7	10	46	180
	31	8.8	10	44	170

Notes:

Only extreme outliers removed

Indicates outlier removed

45 Indicates control limit used

Table E-2
Bosworth Creek Control Limit Calculations: Major Ion KIPs

	Calcuim	Chloride	Magnesium	Sulphate	TDS
AEMP-04	76	24	28	140	440
	73	19	28	130	390
	75	21	30	150	440
	75	21	30	150	420
	76	20	28	140	380
	71	19	26	140	390
	73	14	29	140	400
	79	17	31	160	420
	65	17	24	120	360
	69	13	28	140	360
	78	18	30	150	440
	70	15	25	130	400
	71	16	24	130	380
	30	8.1	9.1	38	160
	80	20	28	170	490
	72	17	26	120	440
	92	30	36	160	480
	84	35	32	190	480
	71	19	27	120	370
	71	18	27	120	360
	75	27	27	150	430
	79	31	31	150	460

	25%	71	17	26.25	130	380
	75%	77.5	21	30	150	440
IQR		6.5	4	3.75	20	60
Lower Mild Boundary		61.25	11	20.625	100	290
Upper Mild Boundary		87.25	27	35.625	180	530
Lower Extreme Boundary		51.5	5	15	70	200
Upper Extreme Boundary		97	33	41.25	210	620

OUTLIER REMOVED DATASET					
MEAN	75.2	18.2	28.4	144.7	418.2
2 x SD	12.2	9.2	5.9	35.1	79.2
UCL	**87**	**27**	**34**	**180**	**497**
LCL	**63**	**9**	**23**	**110**	**339**

AEMP-04	76	24	28	140	440
	73	19	28	130	390
	75	21	30	150	440
	75	21	30	150	420
	76	20	28	140	380
	71	19	26	140	390
	73	14	29	140	400
	79	17	31	160	420
	65	17	24	120	360
	69	13	28	140	360
	78	18	30	150	440
	70	15	25	130	400
	71	16	24	130	380
		8.1			
	80	20	28	170	490
	72	17	26	120	440
	92	30	36	160	480
	84		32	190	480
	71	19	27	120	370
	71	18	27	120	360
	75	27	27	150	430
	79	31	31	150	460

Notes

Only extreme outliers removed

Indicates outlier removed

45 Indicates control limit used

Table E-3
Mackenzie River Control Limit Calculations: Total Metals KIPs

	Aluminum	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Molybdenun	Nickel	Selenium	Uranium	Zinc
AEMP-10/AEMP-US-02	0.93	0.00095	0.036	0.00008	0.001	0.001	0.06	0.0006	0.00078	0.00038	0.0005	0.011
	0.037	0.0002	0.078	0.00002	0.0015	0.0036	1.6	0.0013	0.0045	0.0002	0.00098	0.003
	1.5	0.0012	0.072	0.000067	0.0026	0.0037	1.7	0.0014	0.0052	0.00045	0.001	0.0095
	0.96	0.00048	0.052	0.000063	0.001	0.0073	0.3	0.0012	0.0015	0.00037	0.00083	0.0093
	0.23	0.0011	0.075	0.000029	0.001	0.0016	6.6	0.0011	0.005	0.00041	0.00091	0.003
	3	0.0013	0.075	0.00018	0.0044	0.0074	1.9	0.0011	0.0057	0.00047	0.00076	0.099
	1.7	0.0011	0.06	0.000062	0.0045	0.0031	1.6	0.0011	0.017	0.00042	0.00094	0.0098
	0.84	0.00069	0.081	0.000077	0.0033	0.0043	1.2	0.00079	0.0031	0.0002	0.00079	0.0097
	1.1	0.0021	0.12	0.00012	0.0032	0.012	3.3	0.0012	0.0081	0.00038	0.0011	0.012
	0.76	0.0013	0.061	0.000065	0.0021	0.0027	2	0.0011	0.0043	0.00053	0.00085	0.0077
	2.7	0.0027	0.077	0.000088	0.0014	0.0026	0.89	0.0015	0.0098	0.00052	0.00084	0.017
	1.7	0.0013	0.076	0.000083	0.0018	0.0042	4.8	0.0011	0.0046	0.00061	0.00097	0.013
	1.6	0.001	0.057	0.000086	0.001	0.0028	2.2	0.00086	0.0033	0.0003	0.00057	0.012
	4.7	0.0039	0.098	0.00028	0.0033	0.005	1.5	0.0012	0.0051	0.0005	0.00087	0.079
	0.44	0.0017	0.085	0.000053	0.0026	0.0032	2.3	0.0019	0.0063	0.00067	0.00095	0.0055
	2	0.00099	0.16	0.00015	0.0026	0.0024	11	0.0012	0.0039	0.0005	0.0011	0.042
	1.6	0.0016	0.084	0.00015	0.0074	0.0012	2.8	0.00099	0.0066	0.00032	0.00083	0.021
	0.046	0.00041	0.041	0.000020	0.001	0.0012	0.062	0.001	0.0012	0.00024	0.00083	0.003
	1.7	0.00092	0.035	0.000048	0.0029	0.0019	1.8	0.00044	0.003	0.0002	0.00032	0.0091
	0.49	0.00051	0.054	0.000029	0.001	0.0014	0.53	0.001	0.0019	0.00036	0.0008	0.0035
	0.091	0.00034	0.04	0.000021	0.001	0.001	0.097	0.00093	0.0014	0.00024	0.00071	0.003
AEMP-US-01 (Midway)	1.6	0.0014	0.073	0.000072	0.0029	0.0027	2.6	0.00057	0.0039	0.0002	0.00059	0.016
	0.39	0.00048	0.051	0.000033	0.001	0.0013	0.48	0.00095	0.0015	0.00031	0.00068	0.0031
	0.7	0.00071	0.054	0.000048	0.0013	0.0017	0.78	0.0009	0.0021	0.00035	0.00071	0.005
	0.079	0.00026	0.035	0.00002	0.001	0.001	0.11	0.00058	0.00071	0.0002	0.00048	0.003
	0.38	0.00038	0.044	0.00002	0.001	0.0017	0.64	0.00058	0.0014	0.0002	0.00047	0.0064
	3.2	0.0033	0.1	0.00017	0.0052	0.0072	6.6	0.0014	0.011	0.00047	0.00094	0.052
	0.3	0.00044	0.051	0.000021	0.001	0.0011	0.45	0.00088	0.0013	0.00028	0.00066	0.003
	0.23	0.00043	0.045	0.000029	0.001	0.001	0.38	0.00062	0.0015	0.0002	0.00051	0.003
25%	0.38	0.00048	0.051	0.000029	0.001	0.0013	0.48	0.00086	0.0015	0.00024	0.00066	0.0031
75%	1.7	0.0013	0.078	0.000086	0.0029	0.0037	2.3	0.0012	0.0052	0.00047	0.00094	0.013
IQR	1.32	0.00082	0.027	0.000057	0.0019	0.0024	1.82	0.00034	0.0037	0.00023	0.00028	0.0099
Lower Mild Boundary	-1.60000	-0.00075	0.01050	-0.00006	-0.00185	-0.00230	-2.25000	0.00035	-0.00405	-0.00011	0.00024	-0.01175
Upper Mild Boundary	3.68000	0.00253	0.11850	0.00017	0.00575	0.00730	5.03000	0.00171	0.01075	0.00082	0.00136	0.02785
Lower Extreme Boundary	**-3.58**	**-0.0020**	**-0.0300**	**-0.0001**	**-0.0047**	**-0.0059**	**-4.9800**	**-0.0002**	**-0.0096**	**-0.00045**	**-0.0002**	**-0.0266**
Upper Extreme Boundary	**5.66000**	**0.00376**	**0.15900**	**0.00026**	**0.00860**	**0.01090**	**7.76000**	**0.00222**	**0.01630**	**0.00116**	**0.00178**	**0.04270**

Table E-3
Mackenzie River Control Limit Calculations: Total Metals KIPs

OUTLIER REMOVED DATASET												
MEAN	1.207	0.001	0.065	0.000	0.002	0.003	1.759	0.001	0.0039	0.0003372	0.001	0.009
2 x SD	2.187	0.001	0.043	0.000	0.003	0.004	3.474	0.001	0.0053	0.0003307	0.000	0.017
UCL	**3.394**	**0.00249**	**0.107**	**0.00016**	**0.0055**	**0.0067**	**5.2**	**0.0017**	**0.009**	**0.000668**	**0.0012**	**0.0260**
LCL	-0.980	-0.00040	**0.022**	-0.00003	-0.0014	-0.00120	-1.715	**0.0004**	-0.001	0.000007	**0.0004**	-0.008
RDL	**0.003**	**0.0002**	0.010	**0.00002**	**0.0010**	**0.0010**	**0.060**	0.0002	**0.0005**	**0.0002**	0.0011	**0.003**

AEMP-10/AEMP-US-02	0.93	0.00095	0.036	0.00008	0.0005	0.0005	0.03	0.0006	0.00078	0.00038	0.0005	0.011
	0.037	0.0002	0.078	0.00001	0.0015	0.0036	1.6	0.0013	0.0045	0.0001	0.00098	0.0015
	1.5	0.0012	0.072	0.000067	0.0026	0.0037	1.7	0.0014	0.0052	0.00045	0.001	0.0095
	0.96	0.00048	0.052	0.000063	0.0005	0.0073	0.3	0.0012	0.0015	0.00037	0.00083	0.0093
	0.23	0.0011	0.075	0.000029	0.0005	0.0016	6.6	0.0011	0.005	0.00041	0.00091	0.0015
	3	0.0013	0.075	0.00018	0.0044	0.0074	1.9	0.0011	0.0057	0.00047	0.00076	
	1.7	0.0011	0.06	0.000062	0.0045	0.0031	1.6	0.0011		0.00042	0.00094	0.0098
	0.84	0.00069	0.081	0.000077	0.0033	0.0043	1.2	0.00079	0.0031	0.0001	0.00079	0.0097
	1.1	0.0021	0.12	0.00012	0.0032		3.3	0.0012	0.0081	0.00038	0.0011	0.012
	0.76	0.0013	0.061	0.000065	0.0021	0.0027	2	0.0011	0.0043	0.00053	0.00085	0.0077
	2.7	0.0027	0.077	0.000088	0.0014	0.0026	0.89	0.0015	0.0098	0.00052	0.00084	0.017
	1.7	0.0013	0.076	0.000083	0.0018	0.0042	4.8	0.0011	0.0046	0.00061	0.00097	0.013
	1.6	0.001	0.057	0.000086	0.0005	0.0028	2.2	0.00086	0.0033	0.0003	0.00057	0.012
	4.7		0.098		0.0033	0.005	1.5	0.0012	0.0051	0.0005	0.00087	
	0.44	0.0017	0.085	0.000053	0.0026	0.0032	2.3	0.0019	0.0063	0.00067	0.00095	0.0055
	2	0.00099		0.00015	0.0026	0.0024		0.0012	0.0039	0.0005	0.0011	0.042
	1.6	0.0016	0.084	0.00015	0.0074	0.0012	2.8	0.00099	0.0066	0.00032	0.00083	0.021
	0.046	0.00041	0.041	0.000010	0.0005	0.0012	0.062	0.001	0.0012	0.00024	0.00083	0.0015
	1.7	0.00092	0.035	0.000048	0.0029	0.0019	1.8	0.00044	0.003	0.0001	0.00032	0.0091
	0.49	0.00051	0.054	0.000029	0.0005	0.0014	0.53	0.001	0.0019	0.00036	0.0008	0.0035
	0.091	0.00034	0.04	0.000021	0.0005	0.0005	0.097	0.00093	0.0014	0.00024	0.00071	0.0015
AEMP-US-01 (Midway)	1.6	0.0014	0.073	0.000072	0.0029	0.0027	2.6	0.00057	0.0039	0.0001	0.00059	0.016
	0.39	0.00048	0.051	0.000033	0.0005	0.0013	0.48	0.00095	0.0015	0.00031	0.00068	0.0031
	0.7	0.00071	0.054	0.000048	0.0013	0.0017	0.78	0.0009	0.0021	0.00035	0.00071	0.005
	0.079	0.00026	0.035	0.00001	0.0005	0.0005	0.11	0.00058	0.00071	0.0001	0.00048	0.0015
	0.38	0.00038	0.044	0.00001	0.0005	0.0017	0.64	0.00058	0.0014	0.0001	0.00047	0.0064
	3.2	0.0033	0.1	0.00017	0.0052	0.0072	6.6	0.0014	0.011	0.00047	0.00094	
	0.3	0.00044	0.051	0.000021	0.0005	0.0011	0.45	0.00088	0.0013	0.00028	0.00066	0.0015
	0.23	0.00043	0.045	0.000029	0.0005	0.0005	0.38	0.00062	0.0015	0.0001	0.00051	0.0015

Notes:
Blue text indicates values measured under the reportable detection limit.
Only extreme outliers removed
Indicates outlier removed
45 Indicates control limit used

Table E-4
Bosworth Creek Control Limit Calculations: Total Metals KIPs

	Aluminum	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Molybdenum	Nickel	Selenium	Uranium	Zinc
AEMP-04	0.0059	0.0002	0.07	0.00002	0.001	0.00058	0.081	0.002	0.00068	0.0002	0.0011	0.003
	0.024	0.00023	0.074	0.00002	0.001	0.00028	0.062	0.0017	0.00056	0.00022	0.0011	0.003
	0.037	0.00024	0.073	0.00002	0.001	0.00046	0.062	0.0018	0.00091	0.0002	0.0011	0.003
	0.015	0.0002	0.085	0.00002	0.001	0.001	0.06	0.0019	0.0005	0.0002	0.0011	0.0072
	0.0054	0.0002	0.079	0.00002	0.001	0.001	0.089	0.0018	0.00082	0.0002	0.001	0.003
	0.086	0.00023	0.072	0.00002	0.001	0.001	0.2	0.0018	0.00089	0.00025	0.0013	0.003
	0.087	0.0003	0.078	0.00002	0.001	0.005	0.06	0.0021	0.00089	0.00021	0.0015	0.003
	2.9	0.00031	0.079	0.000095	0.002	0.0013	0.19	0.0018	0.00076	0.0002	0.0012	0.018
	0.01	0.00036	0.072	0.00002	0.001	0.00047	0.06	0.002	0.00084	0.00026	0.0012	0.003
	0.12	0.00027	0.078	0.00002	0.001	0.00049	0.21	0.002	0.00088	0.00025	0.0012	0.003
	0.013	0.00044	0.079	0.00002	0.001	0.00049	0.14	0.0028	0.0012	0.00028	0.0013	0.003
	0.024	0.00034	0.084	0.00002	0.001	0.0049	0.15	0.0023	0.00087	0.00023	0.0013	0.003
	0.019	0.00024	0.089	0.00002	0.001	0.0007	0.088	0.0018	0.00074	0.0002	0.0013	0.003
	0.084	0.00027	0.076	0.00002	0.001	0.0005	0.35	0.0019	0.001	0.00079	0.0011	0.003
	0.087	0.00026	0.072	0.00002	0.001	0.0003	0.17	0.0018	0.00091	0.0002	0.0012	0.003
	0.09	0.00021	0.076	0.00002	0.001	0.00049	0.1	0.0016	0.00084	0.00033	0.0011	0.003
	0.057	0.0002	0.074	0.00002	0.001	0.0005	0.069	0.0019	0.00071	0.00025	0.0012	0.003
	0.02	0.00034	0.089	0.00002	0.001	0.00081	0.2	0.0021	0.00095	0.00025	0.001	0.003
	0.15	0.0002	0.081	0.00002	0.001	0.00066	0.21	0.002	0.00096	0.00025	0.0011	0.003
	0.077	0.0021	0.072	0.00002	0.001	0.00041	0.23	0.0013	0.0072	0.00039	0.0013	0.003
	0.099	0.0002	0.072	0.00002	0.001	0.00083	3.9	0.0016	0.013	0.0002	0.0013	0.003
	0.013	0.00046	0.086	0.00002	0.0054	0.00077	0.06	0.0021	0.0014	0.00033	0.0015	0.003

		Aluminum	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Molybdenum	Nickel	Selenium	Uranium	Zinc
	25%	0.016	0.0002025	0.07225			0.00049	0.06375	0.0018	0.000775	0.0002	0.0011	
	75%	0.087	0.0003325	0.0805			0.0009575	0.2	0.002	0.0009575	0.0002575	0.0013	
IQR		0.071	0.00013	0.00825			0.0004675	0.13625	0.0002	0.0001825	0.0000575	0.0002	
Lower Mild Boundary		-0.09050	0.00001	0.05988	not calculated	not calculated	-0.00021	-0.14063	0.00150	0.00050	0.00011	0.00080	not calculated
Upper Mild Boundary		0.19350	0.00053	0.09288			0.00166	0.40438	0.00230	0.00123	0.00034	0.00160	
Lower Extreme Boundary		**-0.1970**	**-0.0002**	**0.0475**			**-0.0009**	**-0.3450**	**0.0012**	**0.0002**	**0.00003**	**0.0005**	
Upper Extreme Boundary		**0.3000**	**0.0007**	**0.1053**			**0.0024**	**0.6088**	**0.0026**	**0.0015**	**0.0004**	**0.0019**	

Table E-4
Bosworth Creek Control Limit Calculations: Total Metals KIPs

OUTLIER REMOVED, NDs Removed DATASET												
MEAN	0.0535	0.0003	0.0777	not calculated	not calculated	0.0006	0.1296	0.0019	0.0009	0.0002	0.0012	not calculated
2 x SD	**0.0845**	**0.0002**	**0.0114**	not calculated	not calculated	**0.0004**	**0.1670**	**0.0004**	**0.0004**	**0.0002**	**0.0003**	not calculated
UCL	**0.1380**	**0.0004**	**0.0891**	**0.0001**	**0.0050**	**0.0010**	**0.2966**	**0.0023**	**0.0013**	**0.00039**	**0.0015**	**0.0150**
LCL	-0.0310	0.0001	**0.0664**	not calculated	not calculated	**0.00014**	-0.0374	**0.0014**	0.0004	0.00003	**0.0009**	not calculated
RDL	**0.003**	**0.0002**	0.010	0.00002	**0.0010**	**0.0010**	**0.060**	0.0002	**0.0005**	**0.0002**	0.0001	**0.0030**

AEMP-04	0.0059	0.0002	0.07	0.00002	0.001	0.00058	0.081	0.002	0.00068	0.0001	0.0011	0.003
	0.024	0.00023	0.074	0.00002	0.001	0.00028	0.062	0.0017	0.00056	0.00022	0.0011	0.003
	0.037	0.00024	0.073	0.00002	0.001	0.00046	0.062	0.0018	0.00091	0.0001	0.0011	0.003
	0.015	0.0002	0.085	0.00002	0.001	0.0005	0.03	0.0019	0.00025	0.0001	0.0011	0.0072
	0.0054	0.0002	0.079	0.00002	0.001	0.0005	0.089	0.0018	0.00082	0.0001	0.001	0.003
	0.086	0.00023	0.072	0.00002	0.001	0.0005	0.2	0.0018	0.00089	0.00025	0.0013	0.003
	0.087	0.0003	0.078	0.00002	0.001		0.03	0.0021	0.00089	0.00021	0.0015	0.003
		0.00031	0.079	0.000095	0.002	0.0013	0.19	0.0018	0.00076	0.0001	0.0012	0.018
	0.01	0.00036	0.072	0.00002	0.001	0.00047	0.03	0.002	0.00084	0.00026	0.0012	0.003
	0.12	0.00027	0.078	0.00002	0.001	0.00049	0.21	0.002	0.00088	0.00025	0.0012	0.003
	0.013	0.00044	0.079	0.00002	0.001	0.00049	0.14		0.0012	0.00028	0.0013	0.003
	0.024	0.00034	0.084	0.00002	0.001		0.15	0.0023	0.00087	0.00023	0.0013	0.003
	0.019	0.00024	0.089	0.00002	0.001	0.0007	0.088	0.0018	0.00074	0.0001	0.0013	0.003
	0.084	0.00027	0.076	0.00002	0.001	0.0005	0.35	0.0019	0.001		0.0011	0.003
	0.087	0.00026	0.072	0.00002	0.001	0.0003	0.17	0.0018	0.00091	0.0001	0.0012	0.003
	0.09	0.00021	0.076	0.00002	0.001	0.00049	0.1	0.0016	0.00084	0.00033	0.0011	0.003
	0.057	0.0002	0.074	0.00002	0.001	0.0005	0.069	0.0019	0.00071	0.00025	0.0012	0.003
	0.02	0.00034	0.089	0.00002	0.001	0.00081	0.2	0.0021	0.00095	0.00025	0.001	0.003
	0.15	0.0002	0.081	0.00002	0.001	0.00066	0.21	0.002	0.00096	0.00025	0.0011	0.003
	0.077		0.072	0.00002	0.001	0.00041	0.23	0.0013		0.00039	0.0013	0.003
	0.099	0.0002	0.072	0.00002	0.001	0.00083		0.0016		0.0002	0.0013	0.003
	0.013	0.00046	0.086	0.00002	0.0054	0.00077	0.03	0.0021	0.0014	0.00033	0.0015	0.003

Notes: Blue text indicates values measured under the reportable detection limit.
Only extreme outliers removed
Indicates outlier removed
45 Indicates control limit used

Appendix F. Water Quality Trend Charts

Table F-1
Mann-Kendall Statistical Analysis (2017-2024) - Chloride

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-01 (Lwr Bosworth Crk)	24	138	0.00	2.6196	12	14	22.5	38
AEMP-DS-06 (Fort Good Hope)	8	-18	0.03	-3.1966	-32	7.1	9.85	18

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-01 (Lwr Bosworth Crk)	24	138	0.00	2.6196	12	14	22.5	38
AEMP-DS-06 (Fort Good Hope)	8	-18	0.03	-3.1966	-32	7.1	9.85	18
AEMP-DS-02 (Marine Dock)	27	94	0.05	0.2584	3	3.9	9.9	15
AEMP-US-04 (Upr Bosworth Crk)	6	11	0.06	8.4942	25	29	33.5	39
AEMP-US-01 (Midway)	8	14	0.06	0.8626	8	9.8	11.0	19
AEMP-US-02 (10 mile)	21	54	0.10	0.4105	5	5.1	8.6	11
AEMP-DS-05 (Radar)	21	38	0.26	0.3206	4	5.4	8.4	12
AEMP-DS-03 (Island 3)	25	41	0.34	0.3642	4	2.7	8.5	22
AEMP-US-03 (Norman Wells U/S)	5	-3	0.61	-0.7452	-9	8.2	8.7	11
AEMP-DS-04 (Refinery)	26	4	0.94	0.0000	0	5.0	8.95	14
AEMP-DS-09 (Goose)	4	0	1.00	-3.2001	-37	7.1	8.7	18
AEMP-DS-08 (Radar South)	3	---	--	---	---	7.7	8.6	9.0
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	7.3	7.4	9.1
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	33	36.0	38

Table F-2
Mann-Kendall Statistical Analysis (2017-2024) - Magnesium

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-06 (Fort Good Hope)	8	18	0.03	4.6884	30	12	15.5	21

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-05 (Radar)	21	83	0.01	0.3510	4	7.4	9.8	12
AEMP-US-01 (Midway)	8	19	0.02	0.7565	8	2.7	9.35	10
AEMP-DS-03 (Island 3)	26	96	0.03	0.2245	2	7.7	11.0	13
AEMP-DS-06 (Fort Good Hope)	8	18	0.03	4.6884	30	12	15.5	21
AEMP-US-02 (10 mile)	21	60	0.07	0.1937	2	7.6	10.0	15
AEMP-US-04 (Upr Bosworth Crk)	6	10	0.08	3.0866	10	29	32.0	36
AEMP-DS-01 (Lwr Bosworth Crk)	24	67	0.09	0.3702	1	< 0.20	29.5	34
AEMP-DS-04 (Refinery)	26	62	0.17	0.0668	1	7.3	9.55	11
AEMP-DS-02 (Marine Dock)	28	46	0.36	0.0788	1	7.4	10.0	17
AEMP-US-03 (Norman Wells U/S)	5	4	0.44	0.9315	9	9.6	10.0	12
AEMP-DS-09 (Goose)	4	-1	1.00	-0.9925	-8	11	13.0	14
AEMP-DS-08 (Radar South)	3	---	--	---	---	9.9	10.0	10
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	11	11.0	11
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	31	34.0	36

Table F-3
Mann-Kendall Statistical Analysis (2017-2024) - Calcium

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-04 (Upr Bosworth Crk)	6	12	0.03	11.1811	14	78	82.0	93

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-05 (Radar)	21	80	0.01	0.9877	3	28	34.0	37
AEMP-DS-03 (Island 3)	26	106	0.02	1.0007	3	30	37.5	47
AEMP-DS-04 (Refinery)	26	97	0.03	0.4390	1	26	30.5	34
AEMP-US-04 (Upr Bosworth Crk)	6	12	0.03	11.1811	14	78	82.0	93
AEMP-DS-01 (Lwr Bosworth Crk)	24	76	0.06	0.9763	1	0.33	78.5	87
AEMP-US-01 (Midway)	8	11	0.21	3.6915	14	9.6	26.5	32
AEMP-DS-02 (Marine Dock)	28	63	0.21	0.4064	1	25	32.0	49
AEMP-DS-06 (Fort Good Hope)	8	10	0.25	3.7993	8	42	46.5	56
AEMP-US-03 (Norman Wells U/S)	5	5	0.31	4.2835	13	27	33.0	36
AEMP-US-02 (10 mile)	21	29	0.39	0.4919	1	25	34.0	44
AEMP-DS-09 (Goose)	4	-2	0.73	-15.4594	-36	39	42.5	52
AEMP-DS-08 (Radar South)	3	---	--	---	---	33	34.0	35
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	34	38.0	38
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	80	87.0	91

Table F-4
Mann-Kendall Statistical Analysis (2017-2024) - Sulphate

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-01 (Lwr Bosworth Crk)	24	123	0.00	5.1155	3	110	150.0	190
AEMP-DS-03 (Island 3)	25	96	0.02	2.2474	5	32	47.0	61
AEMP-DS-04 (Refinery)	26	85	0.06	0.7657	2	27	37.0	47
AEMP-US-04 (Upr Bosworth Crk)	6	9	0.10	10.2025	6	160	170.0	180
AEMP-DS-06 (Fort Good Hope)	8	14	0.10	36.0341	47	51	76.5	140
AEMP-DS-05 (Radar)	21	51	0.13	1.3932	4	31	39.0	60
AEMP-DS-09 (Goose)	4	4	0.30	19.7545	35	51	56.0	62
AEMP-US-01 (Midway)	8	8	0.38	6.1131	18	22	34.5	43
AEMP-US-03 (Norman Wells U/S)	5	4	0.46	10.5088	24	28	43.0	45
AEMP-DS-02 (Marine Dock)	27	27	0.58	0.4333	1	24	41.0	73
AEMP-US-02 (10 mile)	21	11	0.76	0.2894	1	27	42.0	60
AEMP-DS-08 (Radar South)	3	---	--	---	---	47	48.0	49
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	43	49.0	62
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	170	180.0	180

Table F-5
Mann-Kendall Statistical Analysis (2017-2024) - Total Dissolved Solids

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-01 (Lwr Bosworth Crk)	24	112	0.00	11.6323	3	320	430.0	510
AEMP-DS-03 (Island 3)	26	94	0.03	5.0977	3	110	190.0	250
AEMP-DS-06 (Fort Good Hope)	8	16	0.05	57.2666	24	200	235.0	290
AEMP-US-01 (Midway)	8	15	0.07	28.8017	19	96	150.0	180
AEMP-US-03 (Norman Wells U/S)	5	5	0.26	20.9088	13	130	160.0	170
AEMP-DS-05 (Radar)	21	34	0.30	0.0000	0	88	170.0	200
AEMP-US-04 (Upr Bosworth Crk)	6	6	0.33	35.2048	7	380	470.0	510
AEMP-US-02 (10 mile)	21	17	0.62	0.0000	0	130	180.0	230
AEMP-DS-04 (Refinery)	26	16	0.73	0.0000	0	88	165.0	200
AEMP-DS-02 (Marine Dock)	28	16	0.76	0.0000	0	96	160.0	240
AEMP-DS-09 (Goose)	4	0	1.00	35.4904	17	180	215.0	240
AEMP-DS-08 (Radar South)	3	---	--	---	---	180	180.0	180
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	150	180.0	200
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	400	460.0	500

Table F-6
Mann-Kendall Statistical Analysis (2017-2024) - Cadmium

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-99	0.00	0.0000	-22	< 0.000020	0.000067	0.00028

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-99	0.00	0.0000	-22	< 0.000020	0.000067	0.00028
AEMP-DS-01 (Lwr Bosworth Crk)	24	-48	0.07	0.0000	0	< 0.000020	0.00001	0.000034
AEMP-DS-05 (Radar)	21	-49	0.14	0.0000	-10	< 0.000020	0.000081	0.00062
AEMP-US-03 (Norman Wells U/S)	5	4	0.46	0.0001	280	< 0.000020	0.000037	0.00044
AEMP-DS-03 (Island 3)	26	-27	0.56	0.0000	-6	0.000023	0.0000985	0.00050
AEMP-US-01 (Midway)	8	-5	0.61	0.0000	-47	< 0.000020	0.000031	0.00017
AEMP-DS-06 (Fort Good Hope)	8	4	0.70	0.0000	18	0.000046	0.000099	0.00014
AEMP-DS-09 (Goose)	4	2	0.73	0.0001	102	0.000027	0.000068	0.000078
AEMP-DS-02 (Marine Dock)	28	15	0.78	0.0000	2	< 0.000020	0.0000565	0.00027
AEMP-DS-04 (Refinery)	26	2	0.98	0.0000	1	0.000025	0.0000765	0.00071
AEMP-US-04 (Upr Bosworth Crk)	6	0	1.00	0.0000	0	< 0.000020	0.00001	< 0.000020
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.000063	0.000075	0.00022
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.000043	0.00014	0.00015
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	< 0.000020	0.00001	< 0.000020

Table F-7
Mann-Kendall Statistical Analysis (2017-2024) - Barium

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-83	0.01	-0.0051	-7	0.035	0.075	0.16
AEMP-US-04 (Upr Bosworth Crk)	6	11	0.06	0.0085	10	0.077	0.0845	0.089
AEMP-US-03 (Norman Wells U/S)	5	6	0.22	0.0399	89	0.035	0.045	0.24
AEMP-DS-01 (Lwr Bosworth Crk)	24	44	0.28	0.0006	1	0.068	0.081	0.087
AEMP-DS-06 (Fort Good Hope)	8	6	0.53	0.0060	8	0.060	0.0755	0.13
AEMP-DS-05 (Radar)	21	-21	0.54	-0.0017	-2	0.039	0.072	0.33
AEMP-US-01 (Midway)	8	-5	0.61	-0.0068	-13	0.035	0.051	0.10
AEMP-DS-09 (Goose)	4	-2	0.73	-0.0493	-72	0.063	0.0685	0.079
AEMP-DS-03 (Island 3)	26	13	0.79	0.0005	1	0.053	0.075	0.24
AEMP-DS-04 (Refinery)	26	12	0.80	0.0006	1	0.035	0.0655	0.39
AEMP-DS-02 (Marine Dock)	28	-4	0.95	0.0000	0	0.034	0.059	0.17
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.049	0.07	0.12
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.068	0.12	0.12
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	0.080	0.084	0.085

Table F-8
Mann-Kendall Statistical Analysis (2017-2024) - Aluminum

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-01 (Lwr Bosworth Crk)	24	-66	0.10	-0.0040	-12	0.010	0.0345	0.23
AEMP-US-02 (10 mile)	21	-54	0.10	-0.1708	-16	0.037	1.1	4.7
AEMP-US-04 (Upr Bosworth Crk)	6	9	0.13	0.1429	200	0.024	0.0715	0.40
AEMP-US-01 (Midway)	8	-10	0.26	-0.3499	-91	0.079	0.385	3.2
AEMP-US-03 (Norman Wells U/S)	5	4	0.46	1.6639	1387	0.025	0.12	6.3
AEMP-DS-03 (Island 3)	26	-28	0.55	-0.0616	-5	0.059	1.35	7.9
AEMP-DS-05 (Radar)	21	-20	0.56	-0.0540	-4	0.024	1.3	8.1
AEMP-DS-02 (Marine Dock)	28	-13	0.81	-0.0096	-2	0.024	0.63	4.4
AEMP-DS-06 (Fort Good Hope)	8	2	0.90	0.0847	8	0.13	1.05	2.3
AEMP-DS-04 (Refinery)	26	-1	1.00	-0.0065	-1	0.020	1.15	8.5
AEMP-DS-09 (Goose)	4	0	1.00	-1.7205	-218	0.069	0.79	1.5
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.28	0.96	3.2
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.36	2.1	2.2
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	0.017	0.018	0.022

Table F-9
Mann-Kendall Statistical Analysis (2017-2024) - Arsenic

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-86	0.01	-0.0002	-14	< 0.00020	0.0011	0.0039

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-86	0.01	-0.0002	-14	< 0.00020	0.0011	0.0039
AEMP-DS-01 (Lwr Bosworth Crk)	24	-74	0.06	0.0000	-5	< 0.00020	0.00025	0.00040
AEMP-US-03 (Norman Wells U/S)	5	6	0.22	0.0015	405	0.00024	0.00038	0.0066
AEMP-DS-05 (Radar)	21	-24	0.48	-0.0001	-6	0.00036	0.0011	0.0081
AEMP-US-01 (Midway)	8	-6	0.53	-0.0001	-29	0.00026	0.00046	0.0033
AEMP-DS-03 (Island 3)	26	-29	0.53	0.0000	-4	0.00031	0.00115	0.0068
AEMP-DS-06 (Fort Good Hope)	8	4	0.71	0.0002	19	0.00043	0.00087	0.0017
AEMP-DS-02 (Marine Dock)	28	-13	0.81	0.0000	-2	0.00023	0.00084	0.0037
AEMP-US-04 (Upr Bosworth Crk)	6	2	0.84	0.0000	0	< 0.00020	0.000175	0.00048
AEMP-DS-04 (Refinery)	26	-2	0.98	0.0000	0	0.00022	0.00125	0.0093
AEMP-DS-09 (Goose)	4	0	1.00	-0.0022	-323	0.00046	0.00068	0.0016
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.00058	0.0009	0.0043
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.00054	0.0021	0.0022
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	< 0.00020	0.00023	0.00023

Table F-10
Mann-Kendall Statistical Analysis (2017-2024) - Chromium (Total)

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-43	0.19	-0.0002	-8	< 0.0010	0.0021	0.0074
AEMP-DS-05 (Radar)	21	-32	0.34	-0.0001	-5	< 0.0010	0.0023	0.014
AEMP-US-01 (Midway)	8	-6	0.47	0.0000	0	< 0.0010	0.0005	0.0052
AEMP-US-03 (Norman Wells U/S)	5	3	0.57	0.0023	462	< 0.0010	0.0005	0.011
AEMP-DS-02 (Marine Dock)	28	23	0.65	0.0000	0	< 0.0010	0.0011	0.0069
AEMP-DS-06 (Fort Good Hope)	8	-3	0.79	-0.0001	-4	< 0.0010	0.00195	0.0034
AEMP-DS-03 (Island 3)	26	-1	1.00	0.0000	0	< 0.0010	0.0025	0.040
AEMP-DS-04 (Refinery)	26	0	1.00	0.0000	0	< 0.0010	0.00185	0.014
AEMP-DS-01 (Lwr Bosworth Crk)	24	-1	1.00	0.0000	0	< 0.0010	0.0005	0.0019
AEMP-US-04 (Upr Bosworth Crk)	6	0	1.00	0.0000	0	< 0.0010	0.0005	< 0.0010
AEMP-DS-09 (Goose)	4	-1	1.00	-0.0061	-580	< 0.0010	0.00105	0.0025
AEMP-DS-08 (Radar South)	3	---	--	---	---	< 0.0010	0.0012	0.0061
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	< 0.0010	0.0032	0.0035
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	< 0.0010	0.0005	< 0.0010

Table F-11
Mann-Kendall Statistical Analysis (2017-2024) - Copper

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-96	0.00	-0.0005	-18	< 0.0010	0.0028	0.012

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-96	0.00	-0.0005	-18	< 0.0010	0.0028	0.012
AEMP-DS-01 (Lwr Bosworth Crk)	24	-93	0.01	0.0000	-6	0.00033	0.0005	0.00093
AEMP-DS-05 (Radar)	21	-65	0.05	-0.0003	-10	0.0011	0.0031	0.021
AEMP-US-04 (Upr Bosworth Crk)	6	5	0.24	0.0000	0	< 0.0010	0.0005	0.0010
AEMP-DS-09 (Goose)	4	-4	0.30	-0.0036	-145	0.0018	0.00245	0.0036
AEMP-US-01 (Midway)	8	-8	0.37	-0.0008	-56	< 0.0010	0.0015	0.0072
AEMP-DS-03 (Island 3)	26	-37	0.42	-0.0002	-6	0.0013	0.0035	0.019
AEMP-US-03 (Norman Wells U/S)	5	4	0.46	0.0035	273	< 0.0010	0.0013	0.015
AEMP-DS-06 (Fort Good Hope)	8	-5	0.61	-0.0003	-10	0.0023	0.003	0.0048
AEMP-DS-04 (Refinery)	26	-11	0.82	0.0000	-1	< 0.0010	0.00325	0.021
AEMP-DS-02 (Marine Dock)	28	-3	0.96	0.0000	0	0.00095	0.0024	0.010
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.0016	0.0027	0.0083
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.0016	0.0054	0.0059
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	< 0.0010	0.0005	< 0.0010

Table F-12
Mann-Kendall Statistical Analysis (2017-2024) - Iron

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-01 (Lwr Bosworth Crk)	24	-95	0.01	-0.0116	-11	< 0.060	0.11	0.57

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-01 (Lwr Bosworth Crk)	24	-95	0.01	-0.0116	-11	< 0.060	0.11	0.57
AEMP-US-02 (10 mile)	21	-65	0.05	-0.2641	-16	< 0.060	1.7	11
AEMP-US-04 (Upr Bosworth Crk)	6	9	0.13	0.3087	196	< 0.060	0.1575	0.75
AEMP-DS-05 (Radar)	21	-43	0.20	-0.1570	-8	< 0.060	2.0	21
AEMP-US-03 (Norman Wells U/S)	5	5	0.31	3.2977	2998	< 0.060	0.11	15
AEMP-DS-03 (Island 3)	26	-42	0.36	-0.1032	-5	0.078	2.2	16
AEMP-DS-06 (Fort Good Hope)	8	8	0.38	0.7242	44	0.12	1.65	2.9
AEMP-US-01 (Midway)	8	-8	0.38	-0.3514	-63	0.11	0.56	6.6
AEMP-DS-02 (Marine Dock)	28	-27	0.60	-0.0383	-3	< 0.060	1.1	9.0
AEMP-DS-04 (Refinery)	26	-12	0.80	-0.0231	-1	< 0.060	1.9	24
AEMP-DS-09 (Goose)	4	0	1.00	-5.4525	-559	0.089	0.975	2.7
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.32	1.7	8.2
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.60	4.7	4.8
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	< 0.060	0.03	0.070

Table F-13
Mann-Kendall Statistical Analysis (2017-2024) - Molybdenum

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-06 (Fort Good Hope)	8	-13	0.11	-0.0001	-8	0.00089	0.0012	0.0013
AEMP-DS-01 (Lwr Bosworth Crk)	24	59	0.14	0.0000	1	0.0016	0.00185	0.0059
AEMP-DS-03 (Island 3)	26	58	0.19	0.0000	2	0.00076	0.00125	0.0027
AEMP-DS-04 (Refinery)	26	44	0.34	0.0000	2	0.00060	0.00099	0.0068
AEMP-US-02 (10 mile)	21	-29	0.39	0.0000	-2	0.00044	0.0011	0.0019
AEMP-US-03 (Norman Wells U/S)	5	4	0.46	0.0006	62	0.00057	0.001	0.0019
AEMP-DS-02 (Marine Dock)	28	37	0.47	0.0000	2	0.00055	0.000975	0.0027
AEMP-US-04 (Upr Bosworth Crk)	6	3	0.70	0.0000	0	0.0018	0.0021	0.0021
AEMP-DS-05 (Radar)	21	11	0.75	0.0000	0	0.00085	0.0011	0.0025
AEMP-US-01 (Midway)	8	3	0.80	0.0000	2	0.00057	0.00075	0.0014
AEMP-DS-09 (Goose)	4	-1	1.00	-0.0012	-99	0.0011	0.0012	0.0025
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.0011	0.0011	0.0014
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.0010	0.0013	0.0015
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	0.0019	0.0019	0.0020

Table F-14
Mann-Kendall Statistical Analysis (2017-2024) - Nickel

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-78	0.02	-0.0006	-14	0.00078	0.0045	0.017

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-78	0.02	-0.0006	-14	0.00078	0.0045	0.017
AEMP-DS-01 (Lwr Bosworth Crk)	24	-87	0.03	-0.0001	-7	< 0.00050	0.000825	0.0036
AEMP-DS-05 (Radar)	21	-52	0.12	-0.0004	-8	0.00073	0.0044	0.031
AEMP-DS-06 (Fort Good Hope)	8	13	0.13	0.0020	37	0.0023	0.0054	0.0077
AEMP-US-03 (Norman Wells U/S)	5	6	0.22	0.0055	343	0.00071	0.0016	0.021
AEMP-US-04 (Upr Bosworth Crk)	6	5	0.45	0.0003	35	0.00060	0.00086	0.0018
AEMP-US-01 (Midway)	8	-5	0.61	-0.0002	-14	0.00071	0.0015	0.011
AEMP-DS-03 (Island 3)	26	-22	0.64	-0.0002	-3	0.0015	0.00485	0.026
AEMP-DS-04 (Refinery)	26	-8	0.87	0.0000	-1	0.00071	0.0047	0.030
AEMP-DS-02 (Marine Dock)	28	-8	0.89	0.0000	0	0.0011	0.00355	0.014
AEMP-DS-09 (Goose)	4	1	1.00	0.0009	26	0.0025	0.0034	0.0060
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.0025	0.0031	0.014
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.0022	0.0076	0.0079
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	0.00054	0.00061	0.0011

Table F-15
Mann-Kendall Statistical Analysis (2017-2024) - Uranium

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-DS-04 (Refinery)	26	61	0.18	0.0000	3	0.00044	0.000785	0.0019
AEMP-DS-03 (Island 3)	26	60	0.18	0.0000	2	0.00057	0.000975	0.0013
AEMP-DS-02 (Marine Dock)	28	61	0.23	0.0000	3	0.00036	0.00074	0.0012
AEMP-US-02 (10 mile)	21	-40	0.23	0.0000	-2	0.00032	0.00084	0.0011
AEMP-US-04 (Upr Bosworth Crk)	6	7	0.25	0.0002	15	0.0011	0.00125	0.0014
AEMP-DS-05 (Radar)	21	36	0.29	0.0000	2	0.00059	0.00087	0.0015
AEMP-US-03 (Norman Wells U/S)	5	5	0.31	0.0004	50	0.00046	0.00077	0.0013
AEMP-DS-06 (Fort Good Hope)	8	-6	0.52	0.0000	-1	0.00089	0.001	0.0011
AEMP-US-01 (Midway)	8	-2	0.90	0.0000	-3	0.00047	0.000625	0.00094
AEMP-DS-01 (Lwr Bosworth Crk)	24	2	0.97	0.0000	0	0.0010	0.0012	0.0016
AEMP-DS-09 (Goose)	4	0	1.00	0.0003	24	0.00091	0.00105	0.0014
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.00088	0.00092	0.0011
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.00086	0.0011	0.0011
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	0.0012	0.0012	0.0012

Table F-16
Mann-Kendall Statistical Analysis (2017-2024) - Zinc

Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-97	0.00	-0.0019	-20	< 0.0030	0.0097	0.099

Full Mann-Kendall Analysis, Sorted by two-sided p-value

Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-97	0.00	-0.0019	-20	< 0.0030	0.0097	0.099
AEMP-DS-01 (Lwr Bosworth Crk)	24	36	0.17	0.0000	0	< 0.0030	0.0015	0.0093
AEMP-DS-06 (Fort Good Hope)	8	11	0.21	0.0162	101	< 0.0030	0.016	0.056
AEMP-US-04 (Upr Bosworth Crk)	6	5	0.24	0.0000	0	< 0.0030	0.0015	0.0034
AEMP-DS-05 (Radar)	21	-31	0.36	-0.0011	-9	< 0.0030	0.012	0.11
AEMP-US-01 (Midway)	8	-7	0.44	-0.0024	-59	< 0.0030	0.00405	0.052
AEMP-DS-02 (Marine Dock)	28	38	0.46	0.0003	3	< 0.0030	0.011	0.10
AEMP-US-03 (Norman Wells U/S)	5	3	0.57	0.0207	1381	< 0.0030	0.0015	0.24
AEMP-DS-03 (Island 3)	26	-25	0.59	-0.0010	-6	< 0.0030	0.0165	0.092
AEMP-DS-04 (Refinery)	26	16	0.74	0.0002	2	< 0.0030	0.01105	0.17
AEMP-DS-09 (Goose)	4	0	1.00	-0.0073	-94	0.0048	0.00775	0.039
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.0060	0.032	0.064
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.0040	0.055	0.062
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	< 0.0030	0.0015	< 0.0030

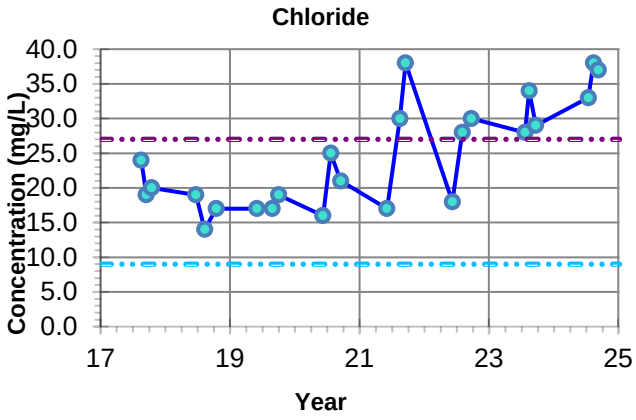
Table F-17
Mann-Kendall Statistical Analysis (2017-2024) - Selenium

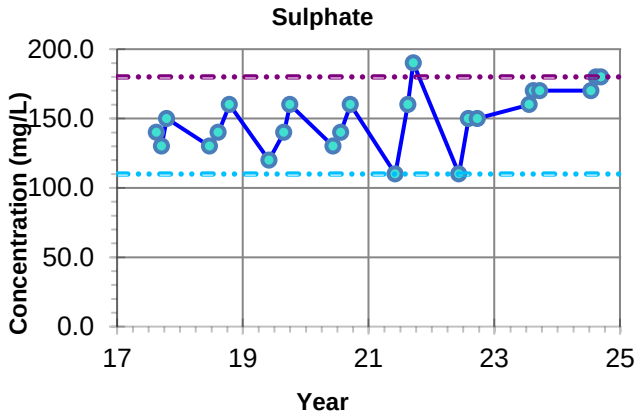
Filtered Trend Results, two-sided p-value < 0.05 And Normalized Slope > ± 10%/Year

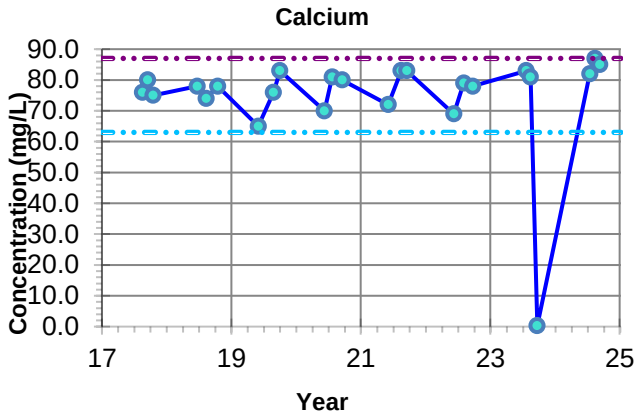
Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)

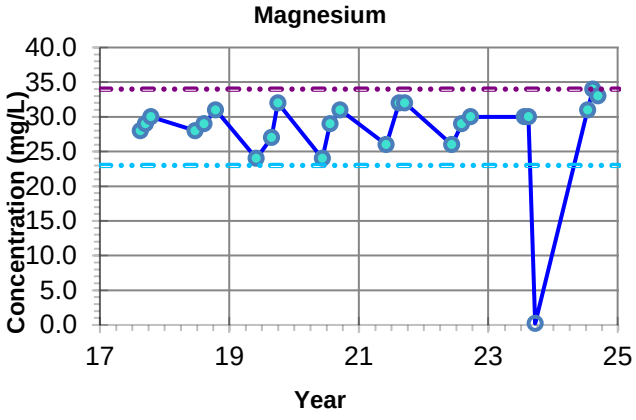
Full Mann-Kendall Analysis, Sorted by two-sided p-value

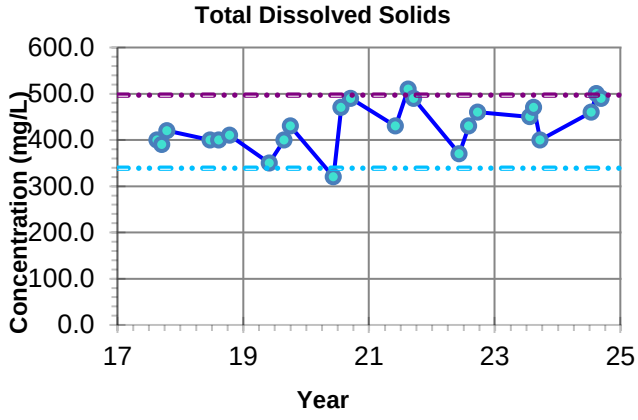
Location	Count	Mann-Kendall S	Two-sided p-value (for MK test)	Slope (mg/L/year)	Normalized Slope (%/year)	Min (mg/L)	Median (mg/L)	Max (mg/L)
AEMP-US-02 (10 mile)	21	-68	0.04	0.0000	-8	< 0.00020	0.00038	0.00067
AEMP-DS-01 (Lwr Bosworth Crk)	24	-65	0.06	0.0000	0	< 0.00020	0.0001	0.00032
AEMP-US-03 (Norman Wells U/S)	5	6	0.22	0.0003	80	< 0.00020	0.00033	0.00099
AEMP-DS-03 (Island 3)	26	51	0.27	0.0000	2	0.00030	0.000475	0.00081
AEMP-DS-04 (Refinery)	26	48	0.30	0.0000	4	< 0.00020	0.000375	0.00099
AEMP-DS-06 (Fort Good Hope)	8	5	0.61	0.0000	4	0.00050	0.000555	0.00069
AEMP-US-04 (Upr Bosworth Crk)	6	-3	0.69	0.0000	-4	< 0.00020	0.00022	0.00025
AEMP-DS-09 (Goose)	4	-2	0.73	-0.0001	-13	0.00046	0.00048	0.00051
AEMP-DS-02 (Marine Dock)	28	18	0.73	0.0000	2	< 0.00020	0.000325	0.00073
AEMP-DS-05 (Radar)	21	-7	0.85	0.0000	0	< 0.00020	0.00041	0.00074
AEMP-US-01 (Midway)	8	0	1.00	0.0000	0	< 0.00020	0.00019	0.00047
AEMP-DS-08 (Radar South)	3	---	--	---	---	0.00038	0.00045	0.00053
AEMP-DS-07 (Fort G H-Rampart)	3	---	--	---	---	0.00044	0.0005	0.00057
AEMP-US-05 (Bosworth Creek)	3	---	--	---	---	< 0.00020	0.0001	< 0.00020











NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-01 (Lwr Bosworth Crk)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

PROJECT NUMBER: 417085-54419-24200

Figure F-1

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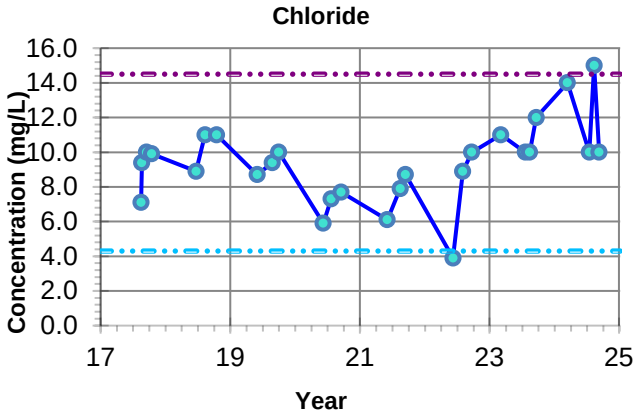
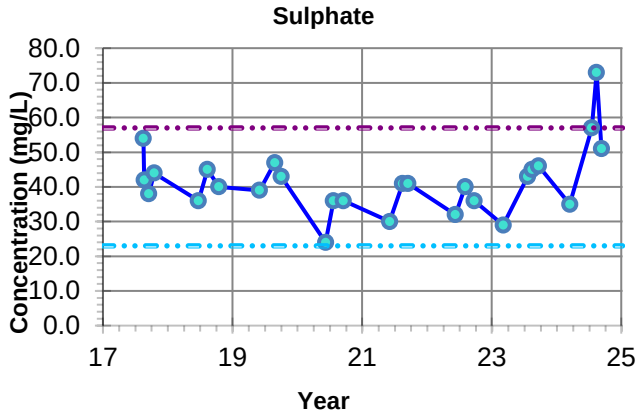
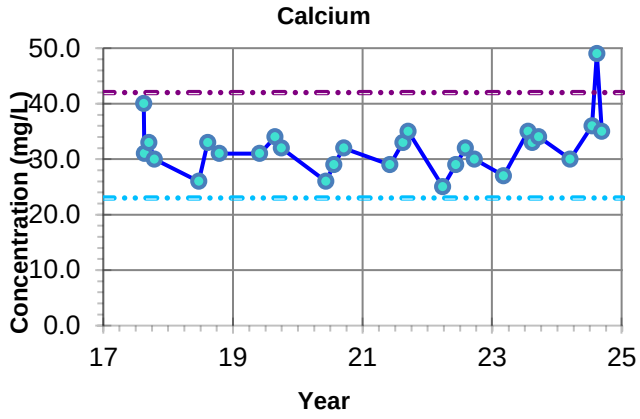
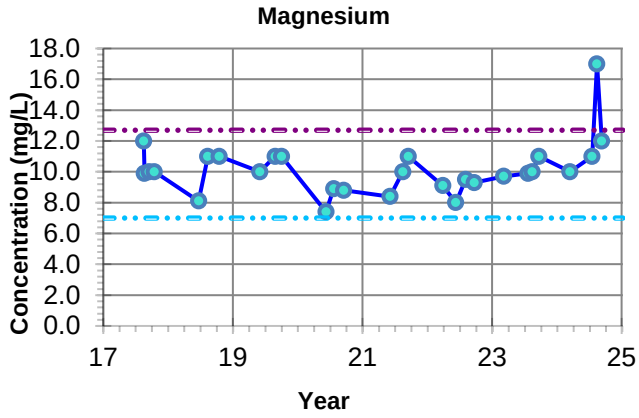
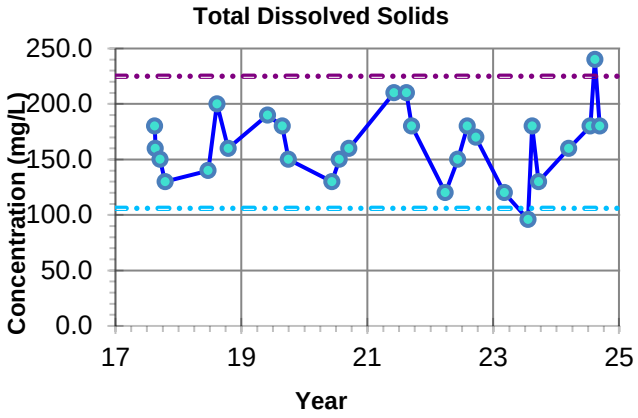










NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-02 (Marine Dock)

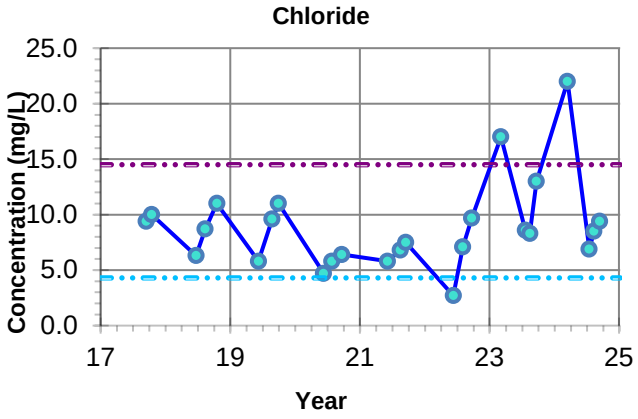
09-Apr-2025	date	NA	edited by	JC	drawn by	NA	app by

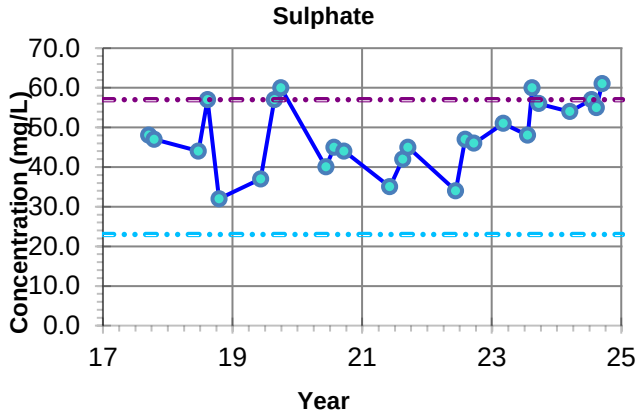
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

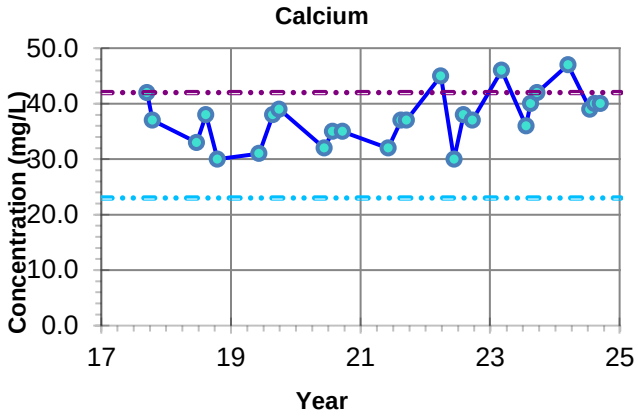
PROJECT NUMBER: 417085-54419-24200

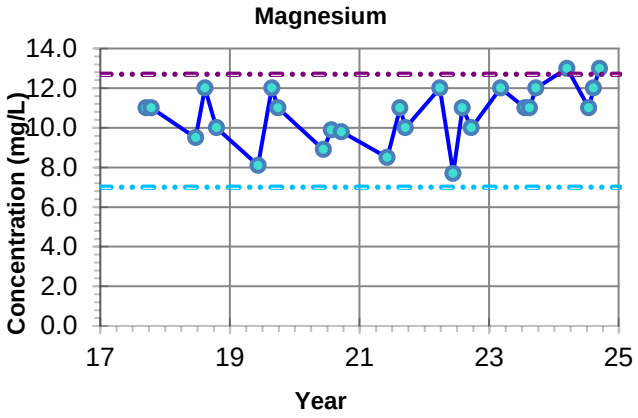
Figure F-2

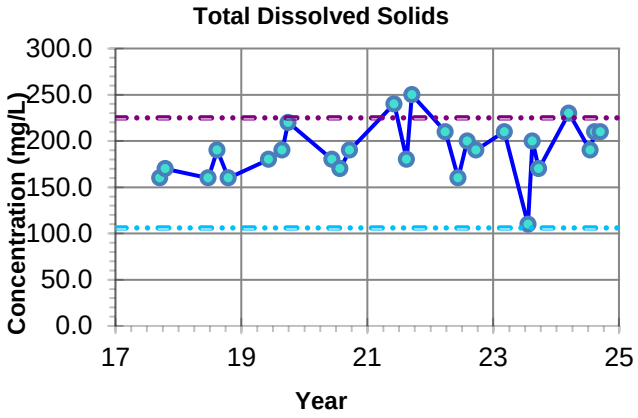
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-











NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-03 (Island 3)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER: 417085-54419-24200

Figure F-3

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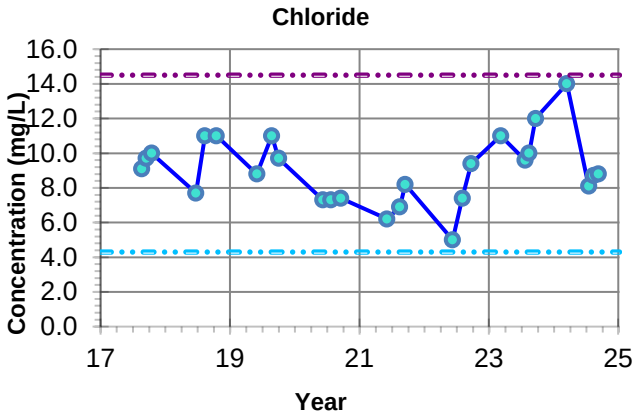
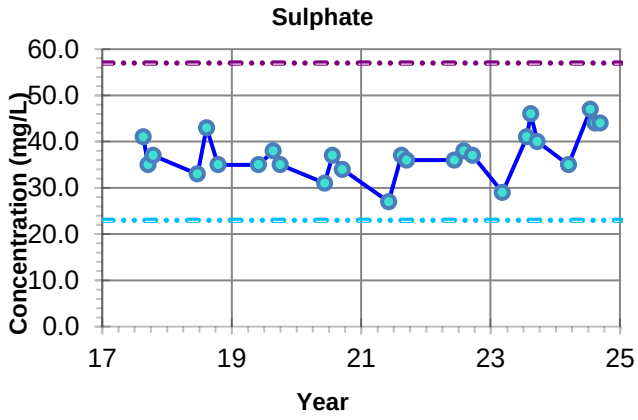
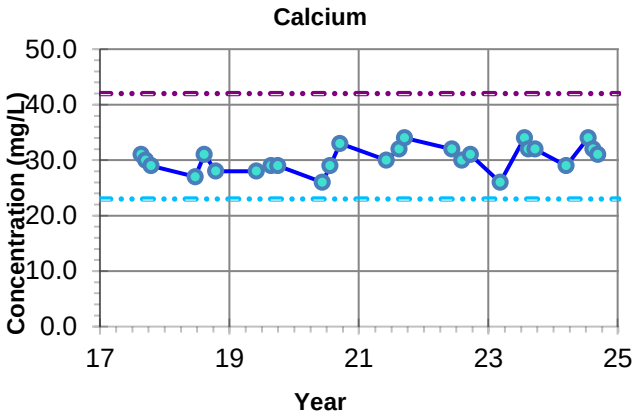
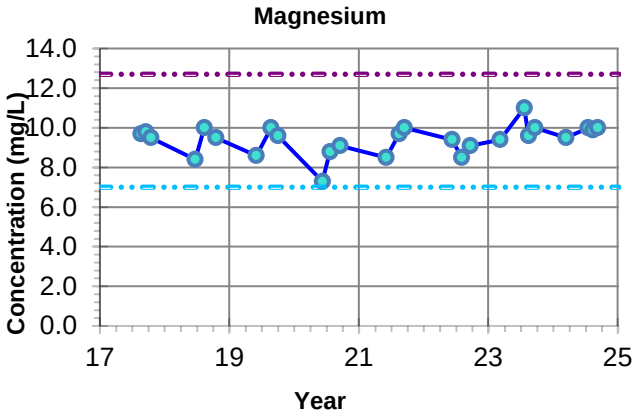
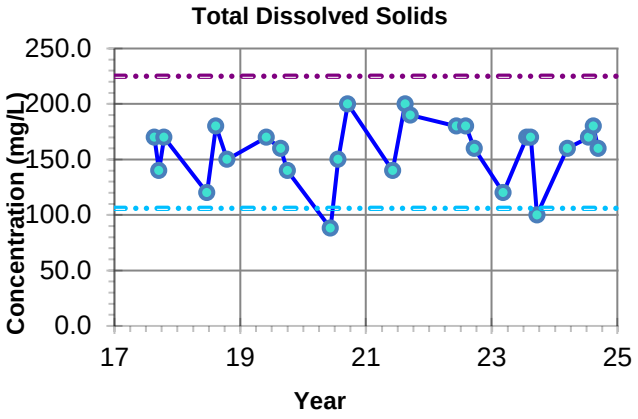










NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

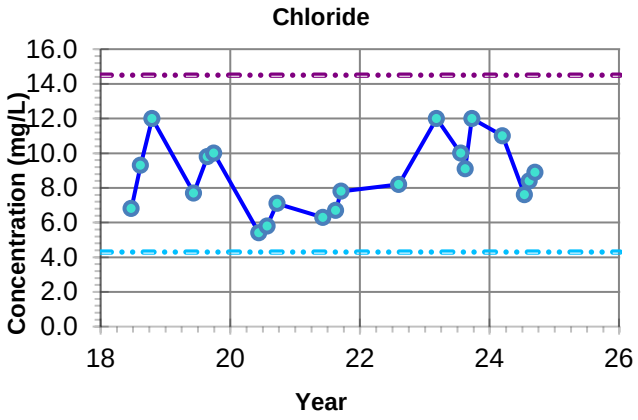
Upper Control Limit

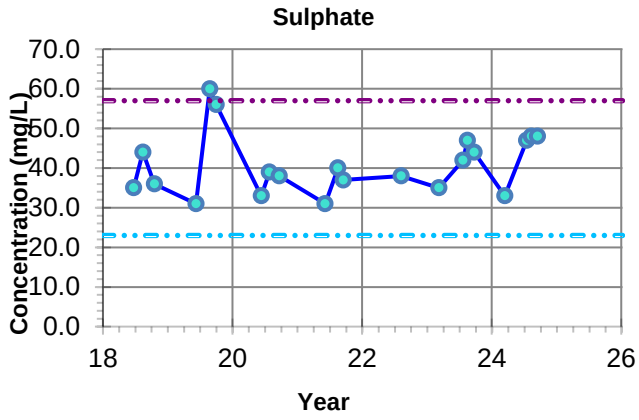
Lower Control Limit

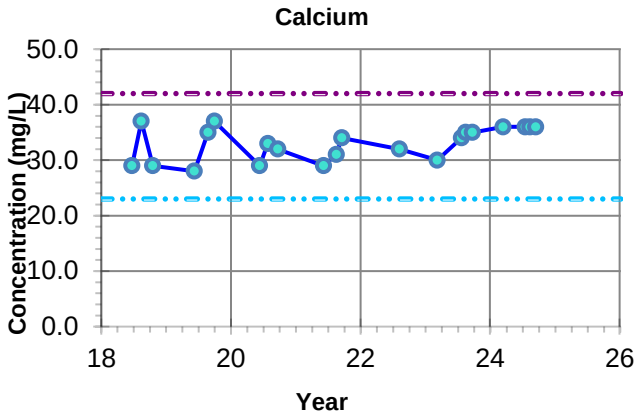
Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

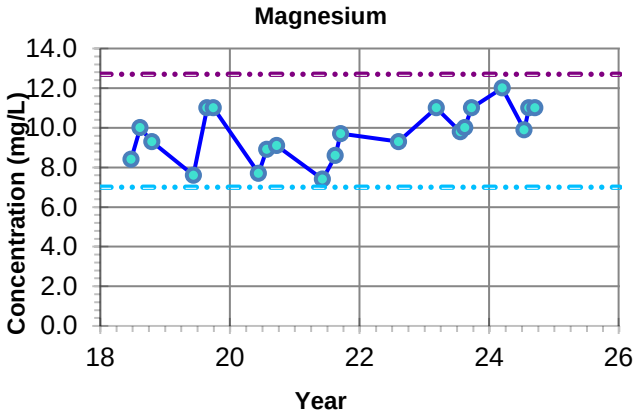
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-04 (Refinery)

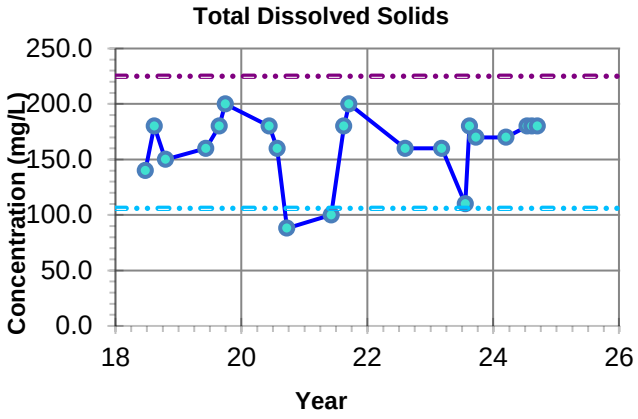
09-Apr-2025 date	NA edited by	JC drawn by	NA app by	PROJECT NUMBER: 417085-54419-24200	Figure F-4











NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

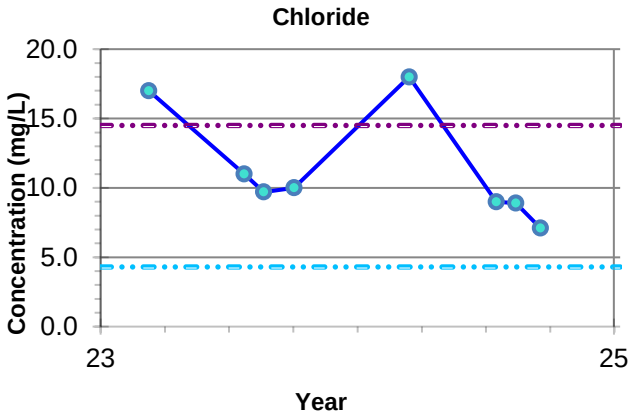
Lower Control Limit

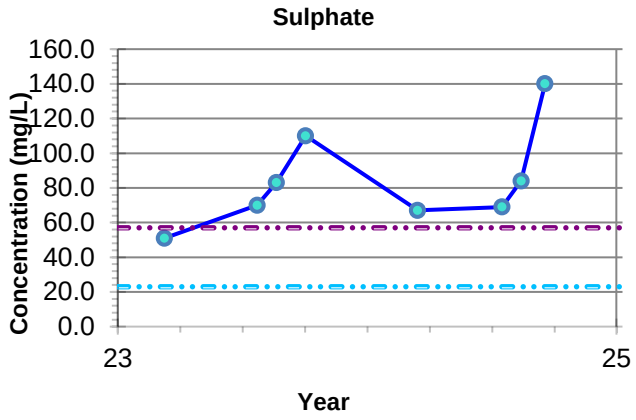
Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

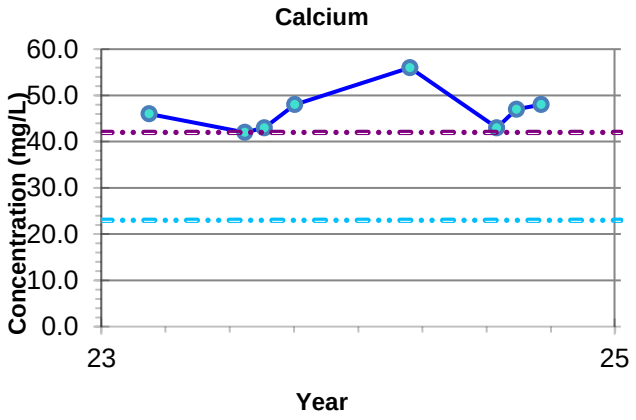
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-05 (Radar)

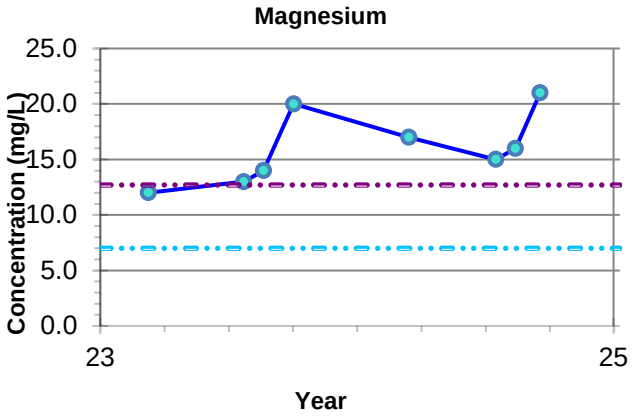
09-Apr-2025 date	NA edited by	JC drawn by	NA app by	PROJECT NUMBER: 417085-54419-24200	Figure F-5

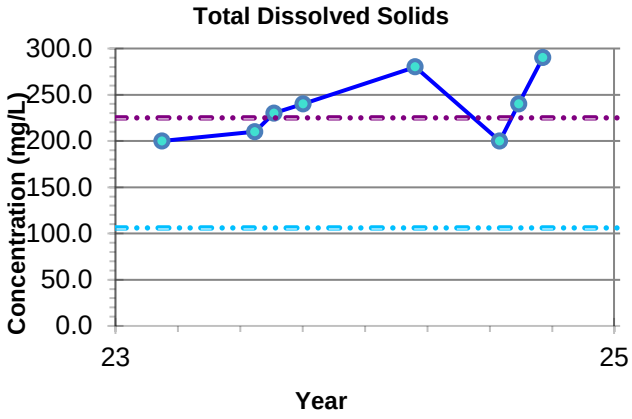
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-











NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-06 (Fort Good Hope)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

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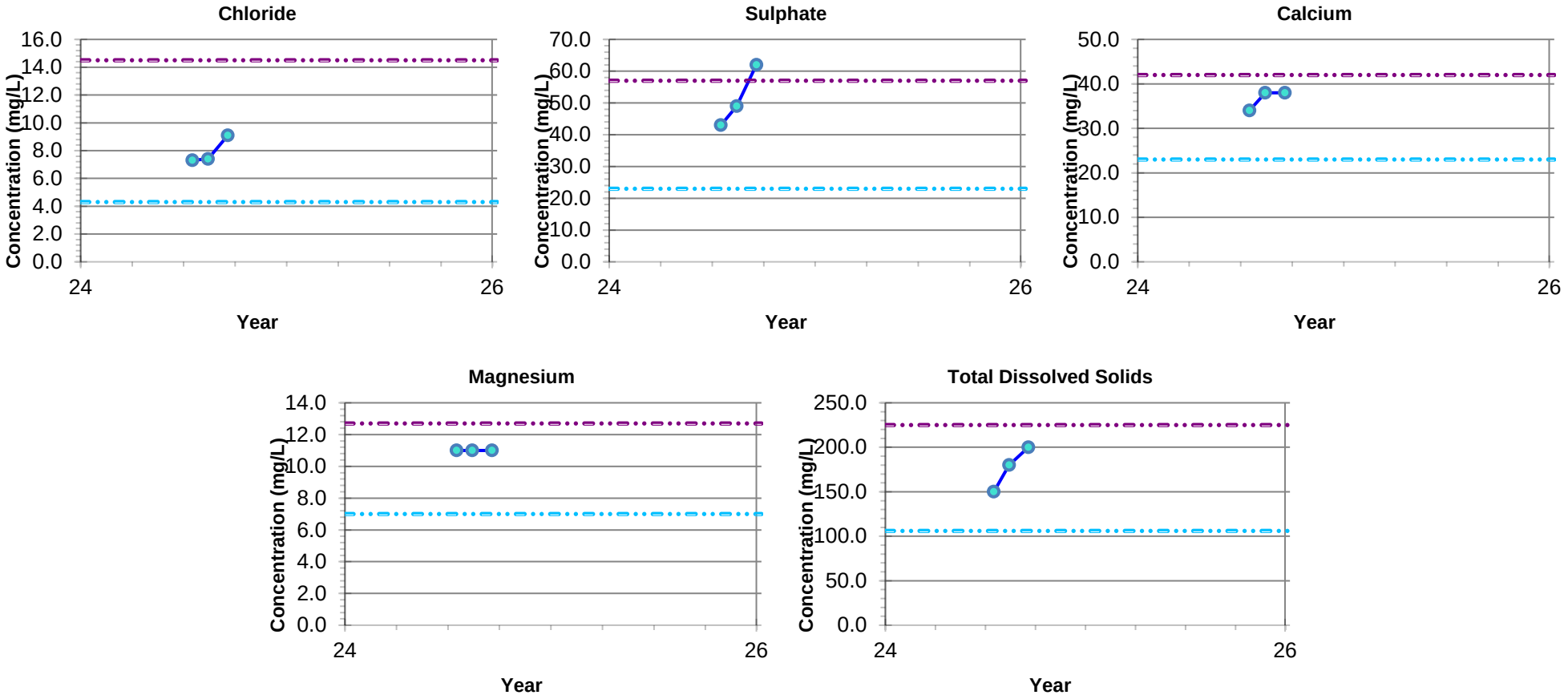
PROJECT NUMBER: 417085-54419-24200

Figure F-6

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

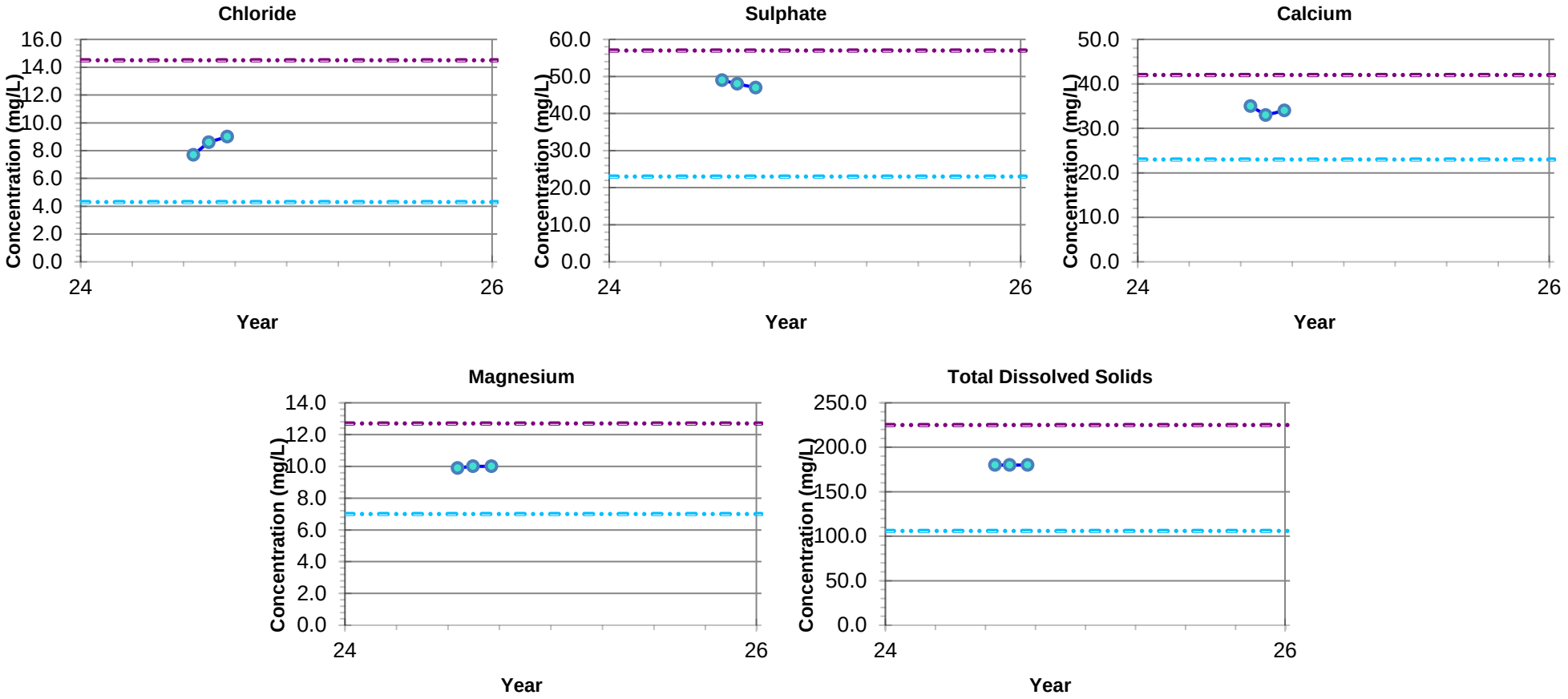
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-07 (Fort G H-Rampart)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

PROJECT NUMBER: 417085-54419-24200

Figure F-7

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-08 (Radar South)

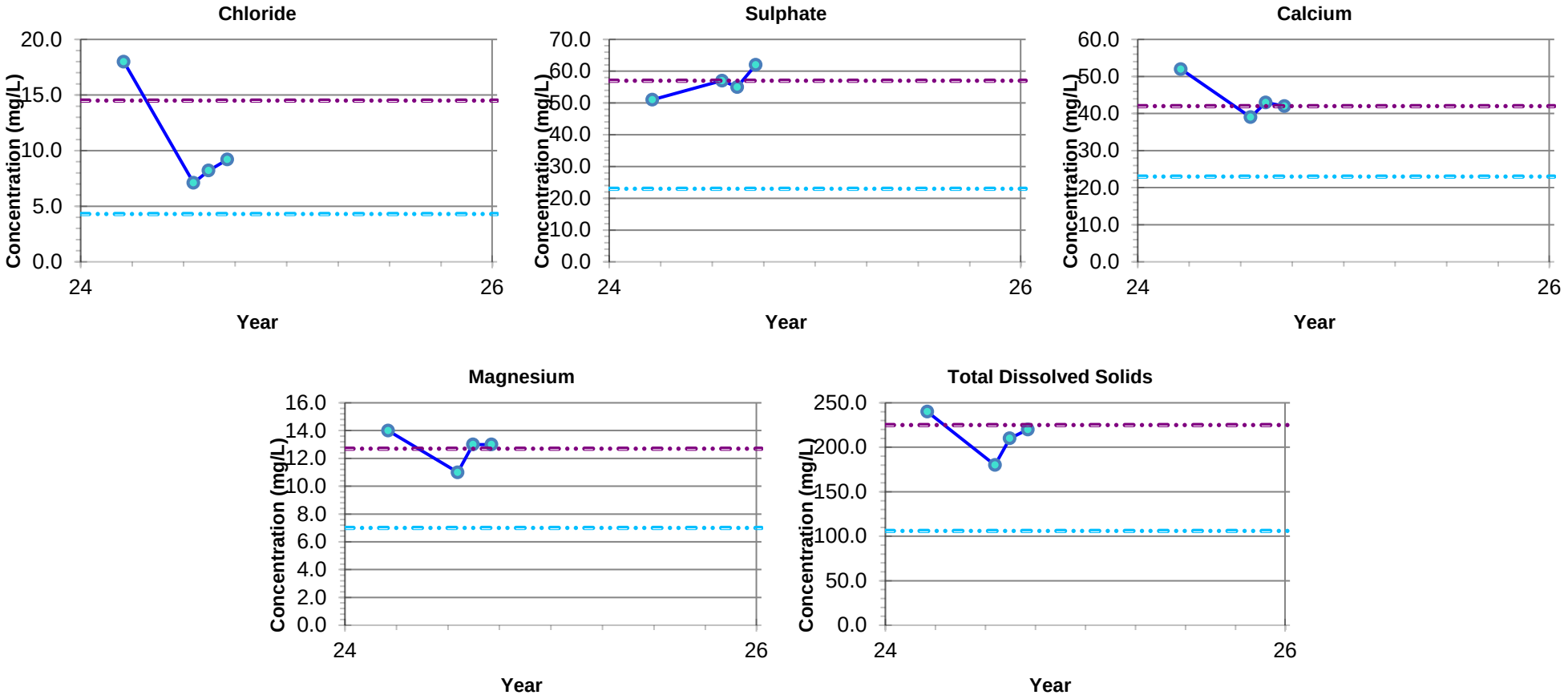
09-Apr-2025	date	NA	edited by	JC	drawn by	NA	app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

PROJECT NUMBER: 417085-54419-24200

Figure F-8

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-09 (Goose)

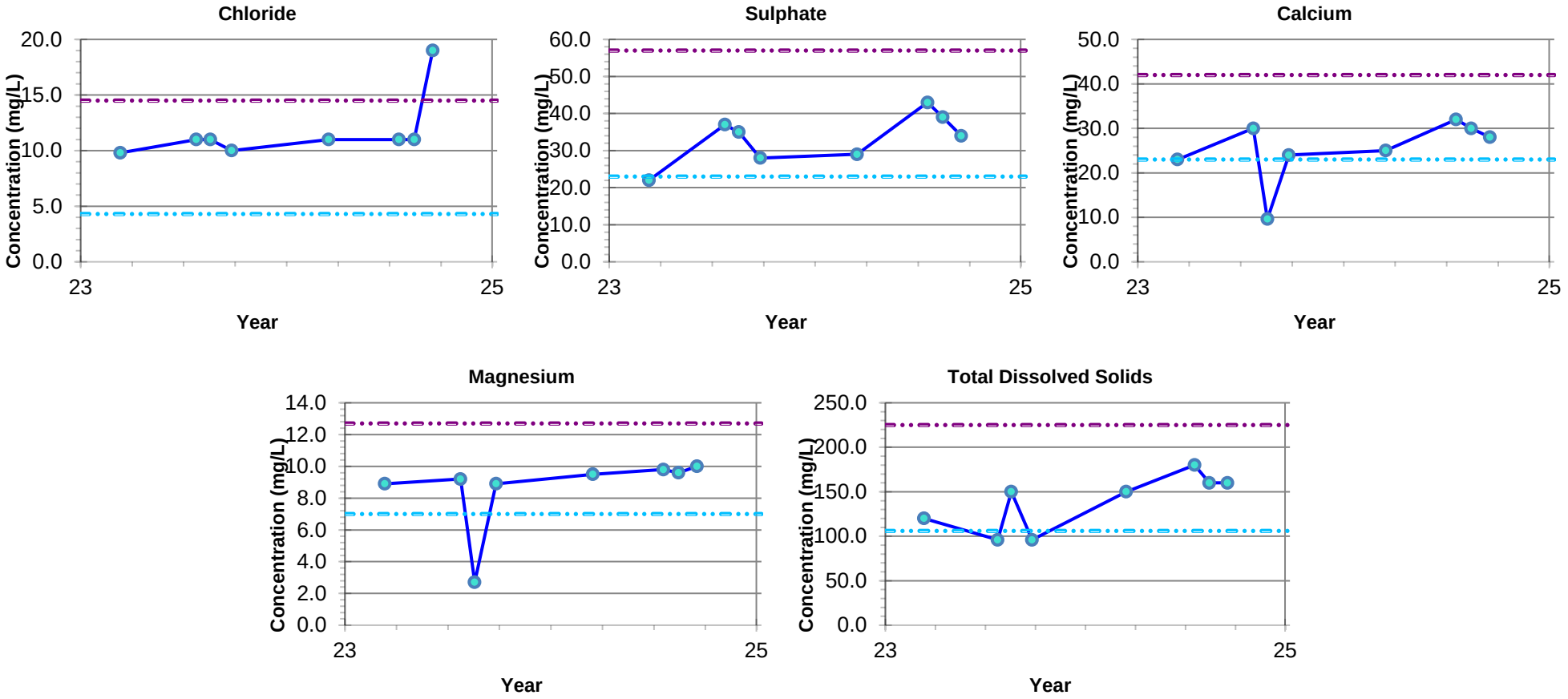
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

PROJECT NUMBER: 417085-54419-24200

Figure F-9

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-01 (Midway)

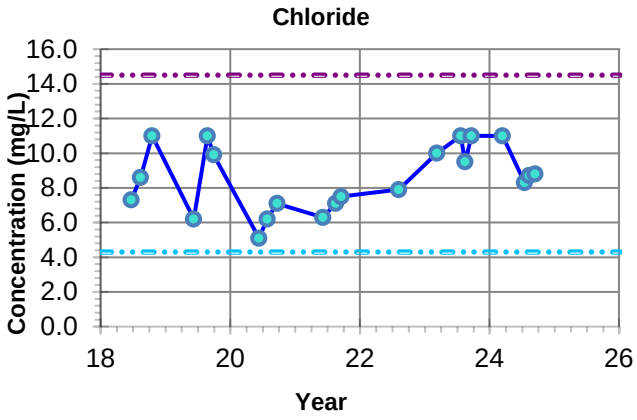
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

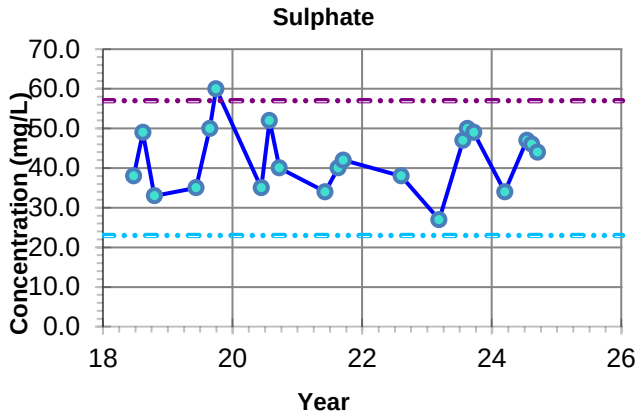
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

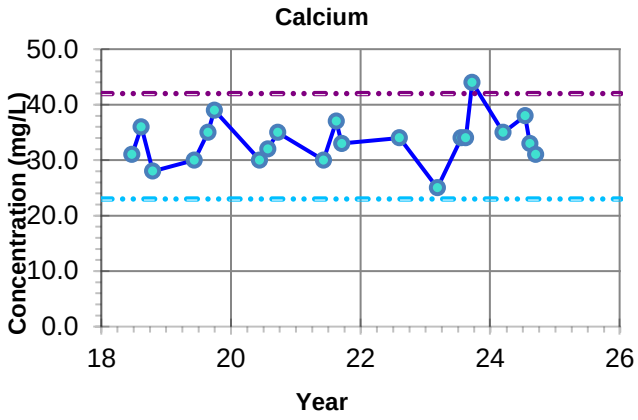
PROJECT NUMBER: 417085-54419-24200

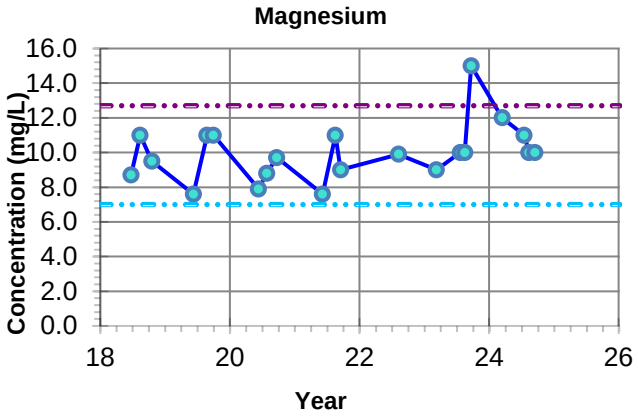
Figure F-10

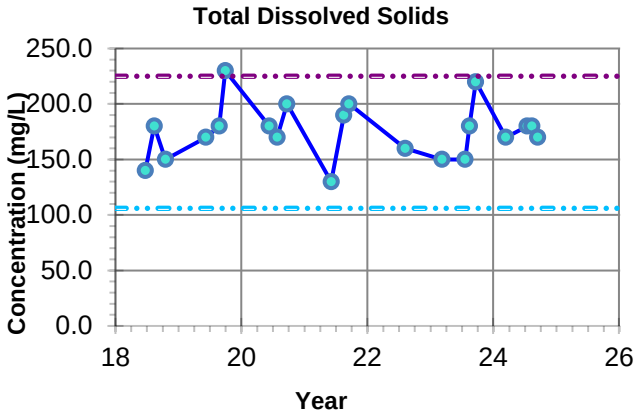
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-











NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

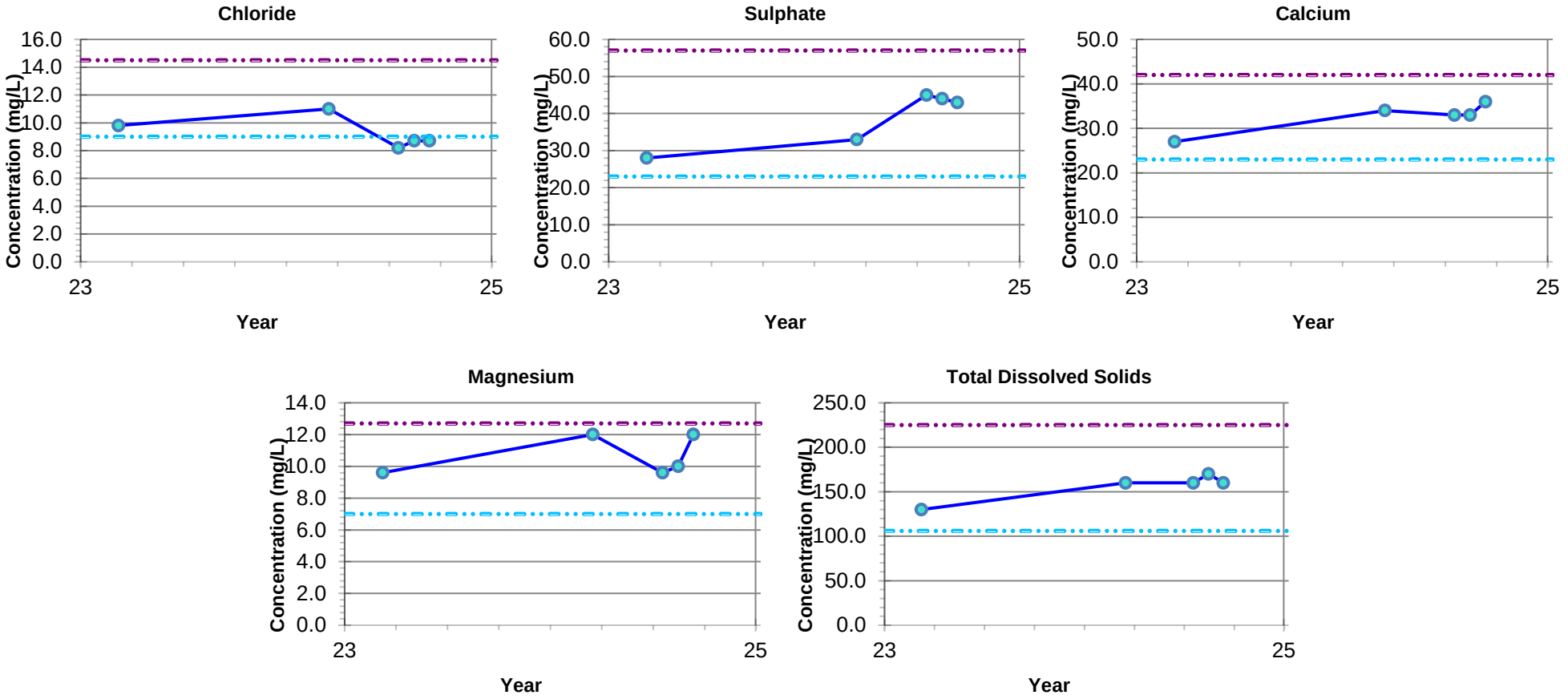
Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-02 (10 mile)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by	PROJECT NUMBER: 417085-54419-24200	Figure F-11

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-03 (Norman Wells U/S)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

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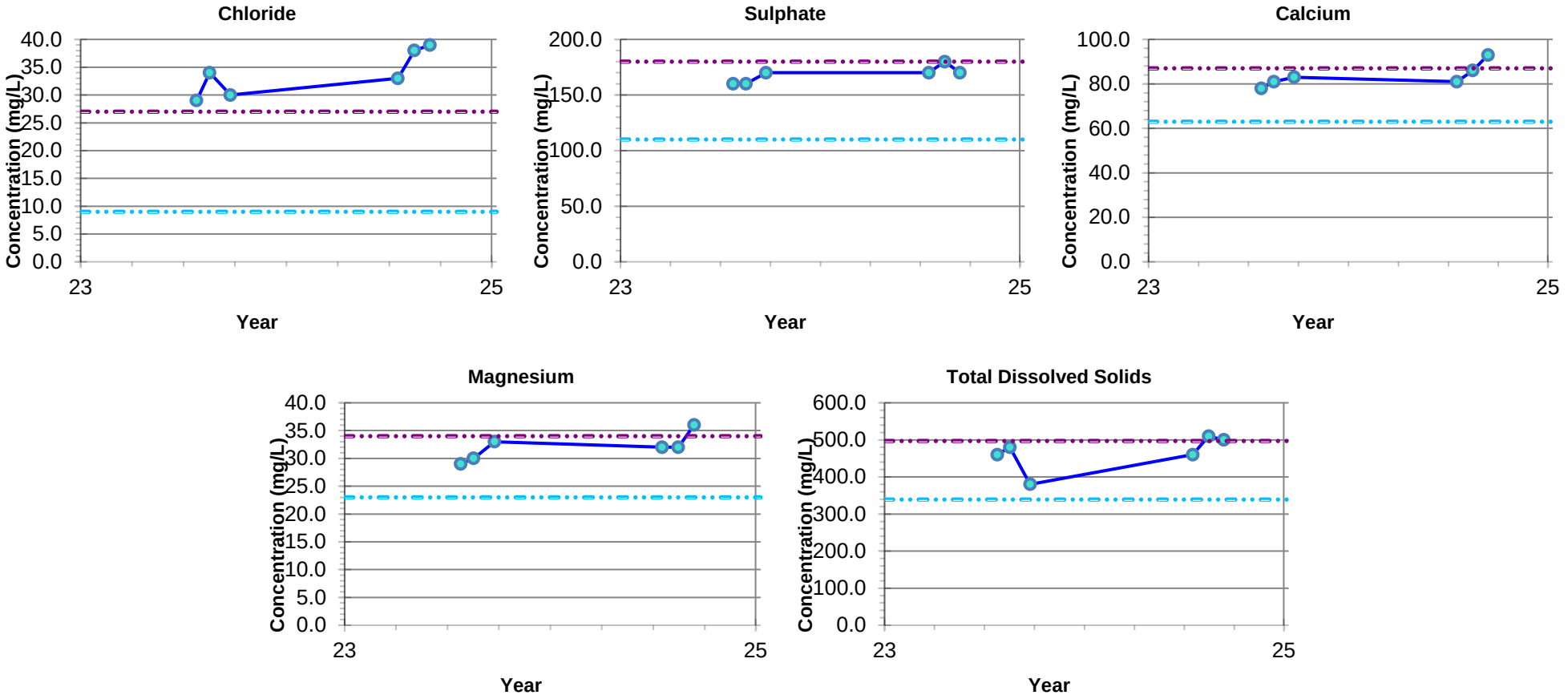
PROJECT NUMBER: 417085-54419-24200

Figure F-12

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

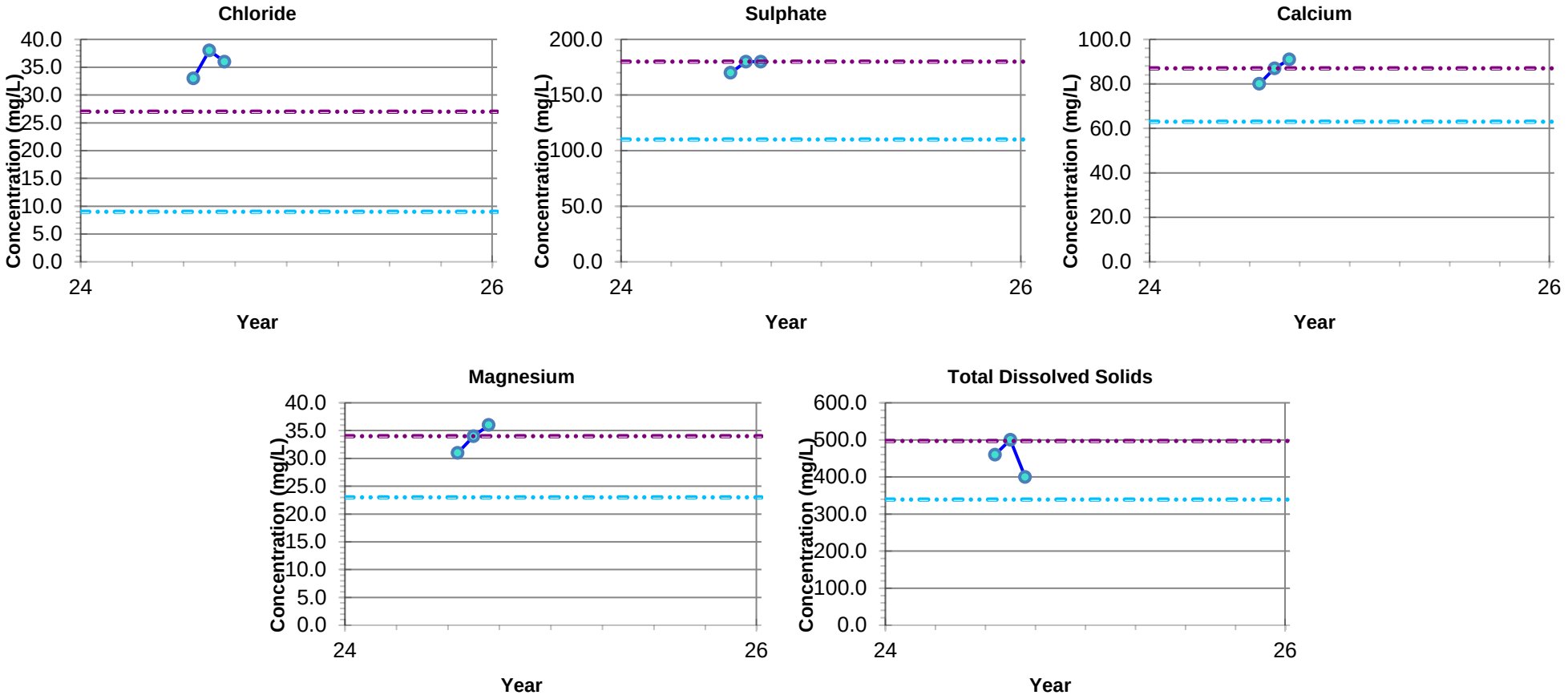
Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-04 (Upr Bosworth Crk)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by	PROJECT NUMBER: 417085-54419-24200	Figure F-13

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-05 (Bosworth Creek)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

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PROJECT NUMBER: 417085-54419-24200

Figure F-14

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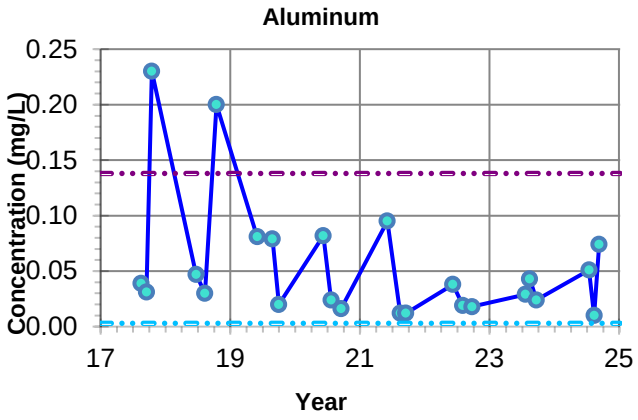
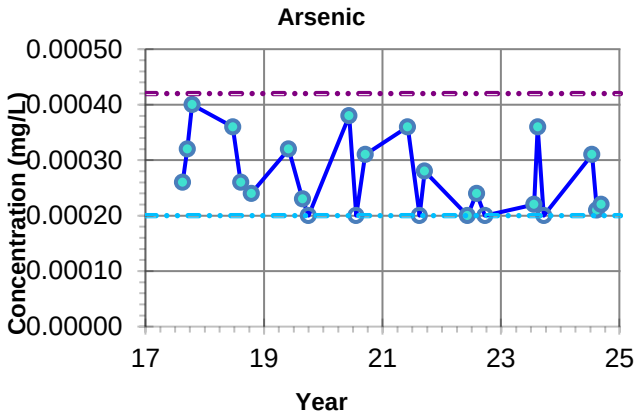
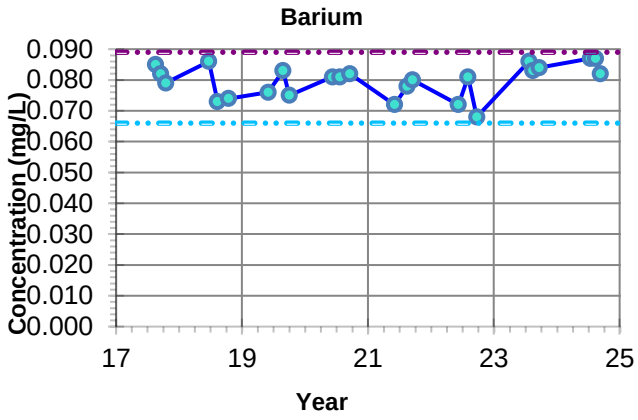
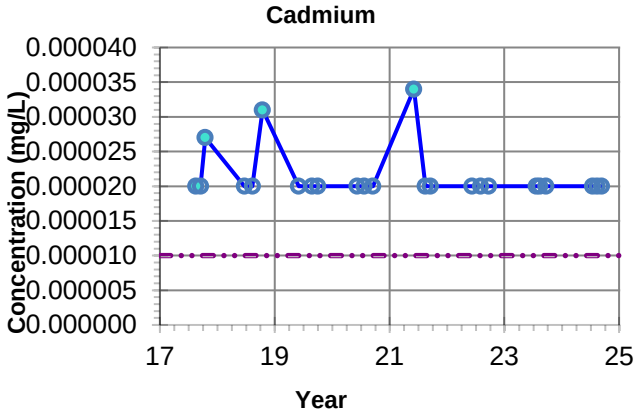
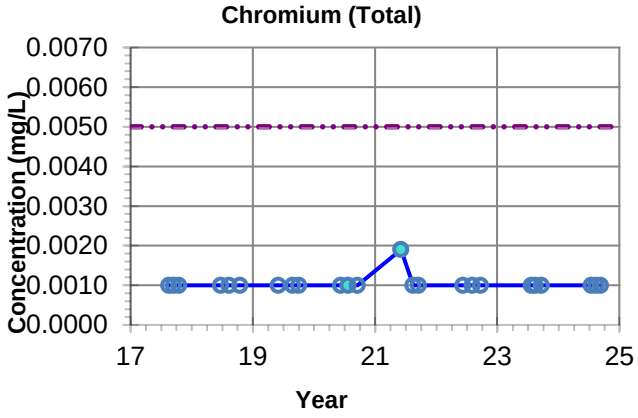
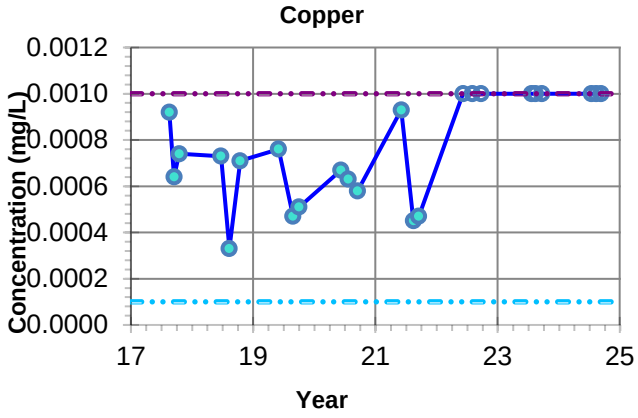












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-01 (Lwr Bosworth Crk)

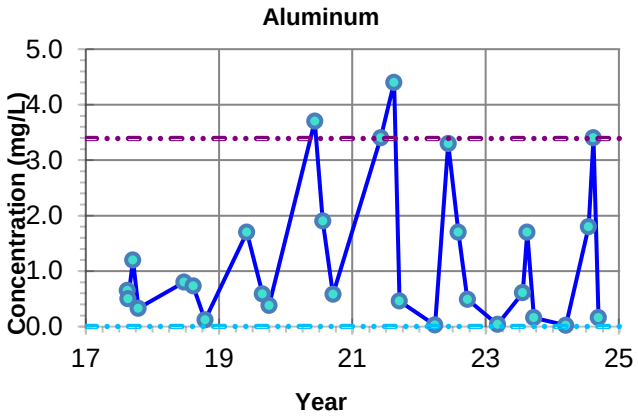
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

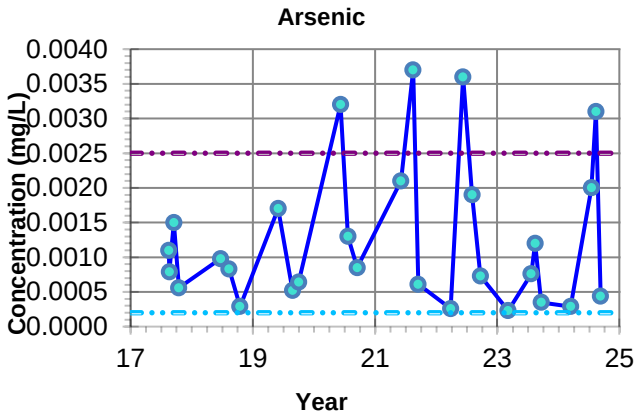
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

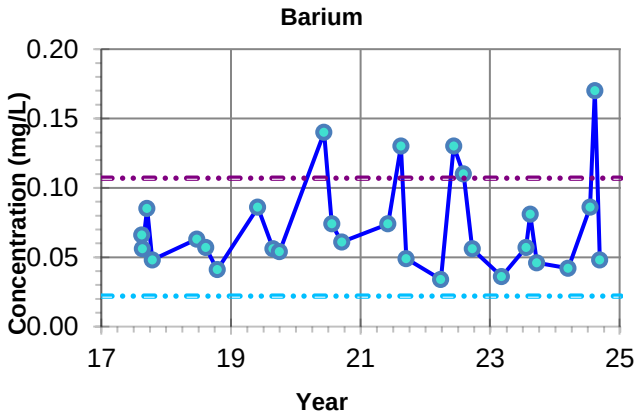
PROJECT NUMBER: 417085-54419-24200

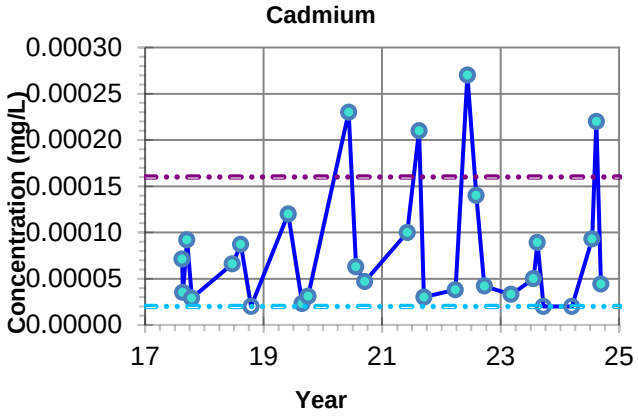
Figure F-15

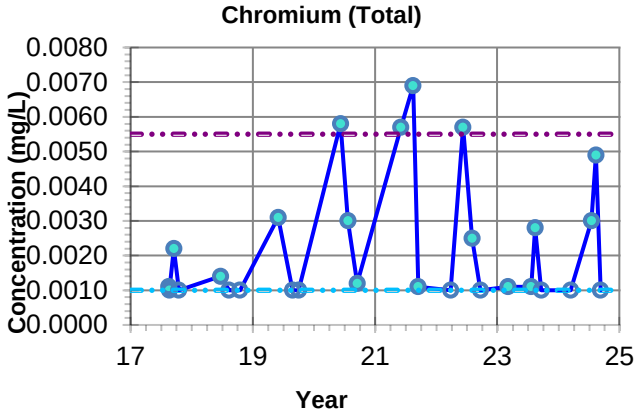
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

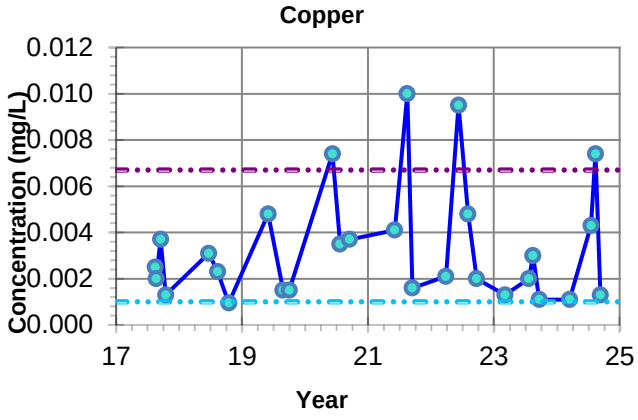












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

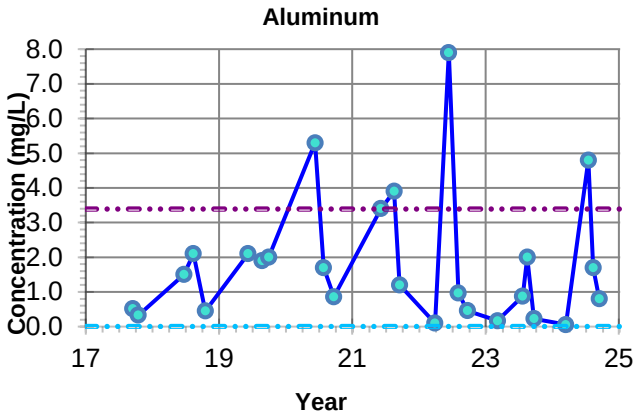
Lower Control Limit

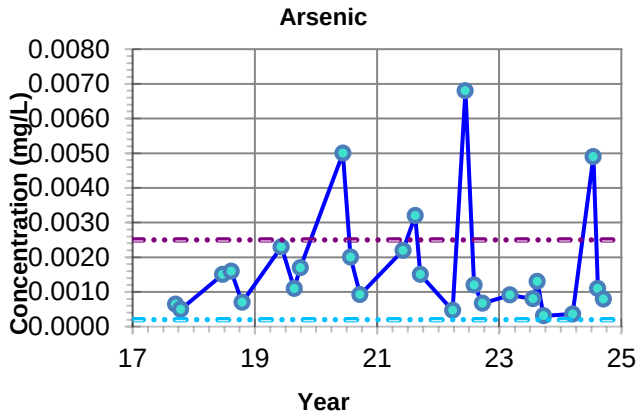
Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

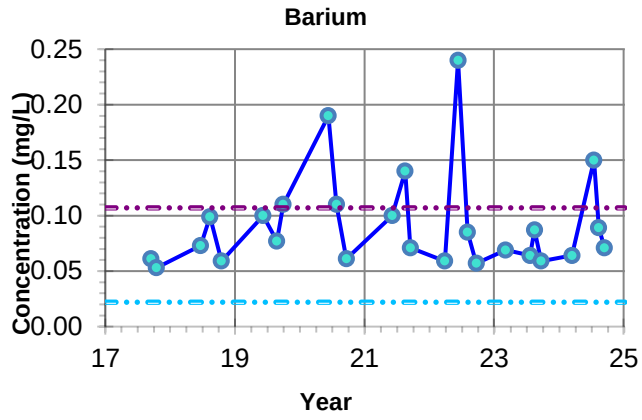
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-02 (Marine Dock)

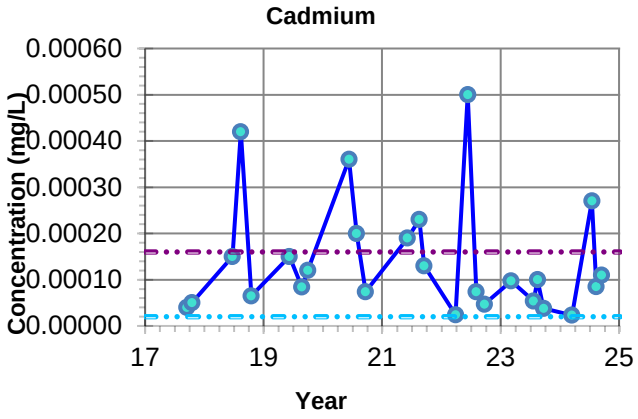
09-Apr-2025 date	NA edited by	JC drawn by	NA app by	PROJECT NUMBER: 417085-54419-24200	Figure F-16

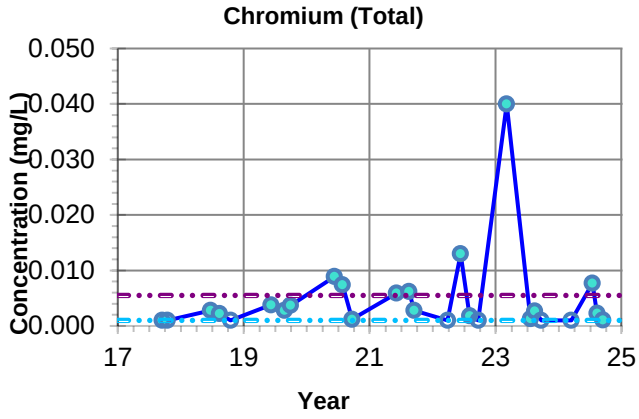
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

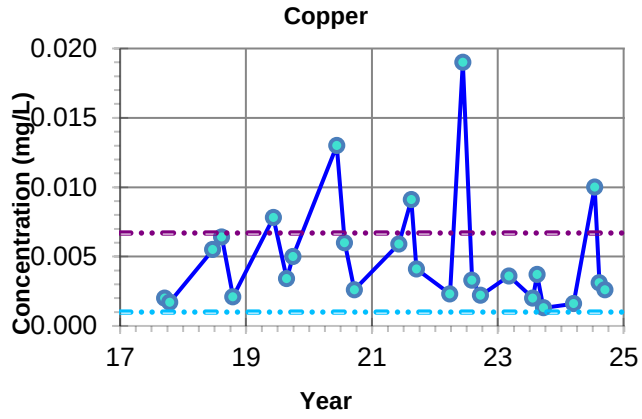












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

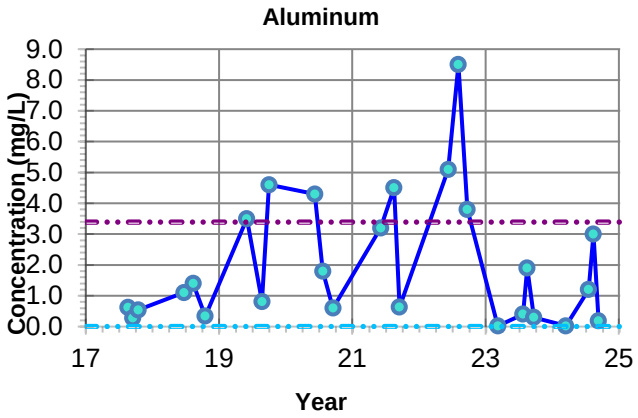
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-03 (Island 3)

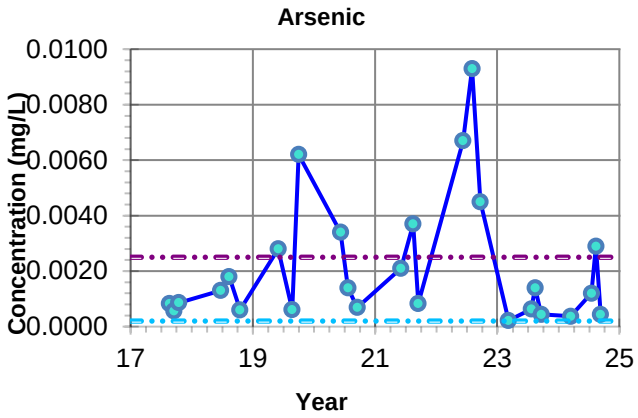
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

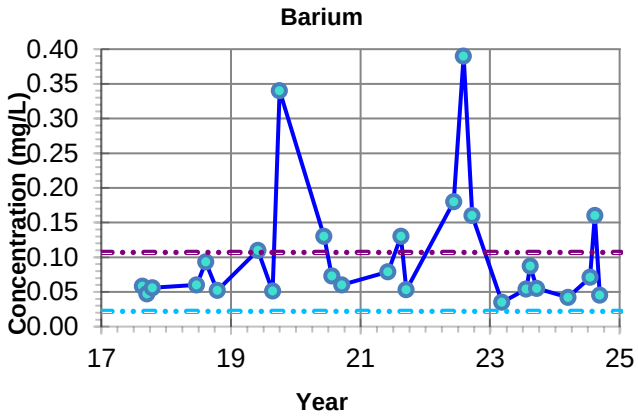
PROJECT NUMBER: 417085-54419-24200

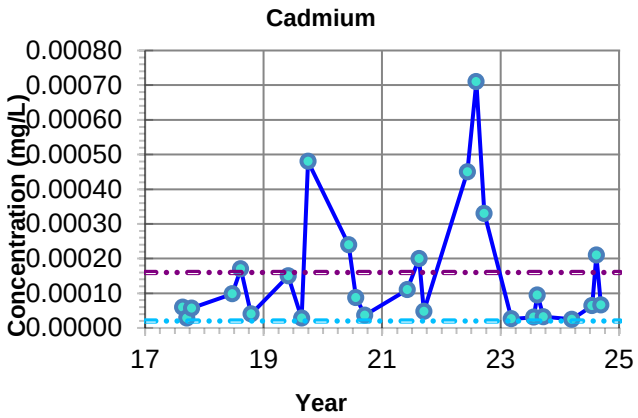
Figure F-17

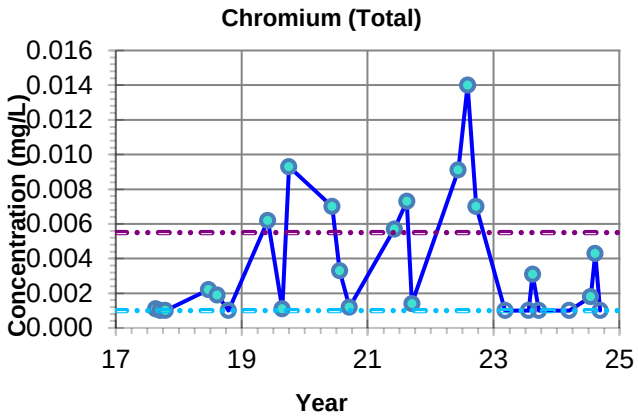
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

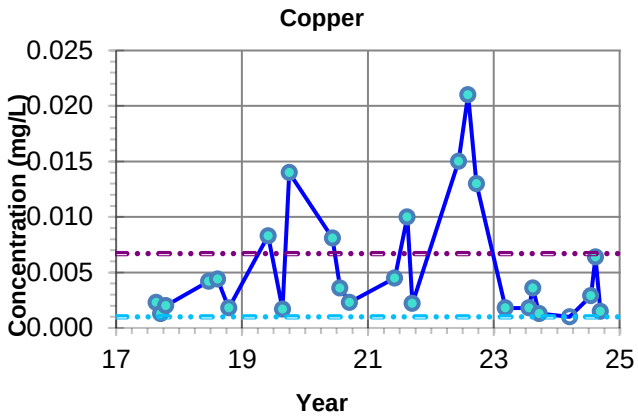












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

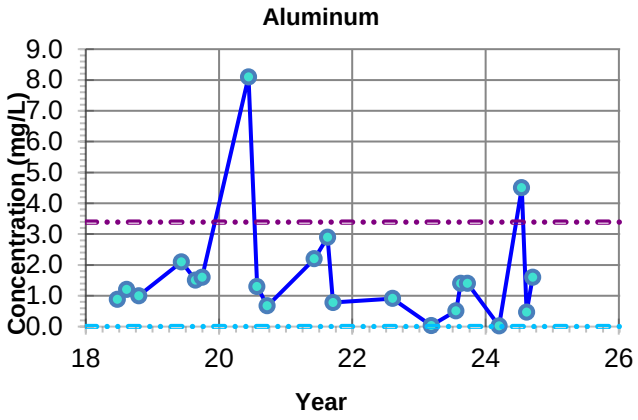
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-04 (Refinery)

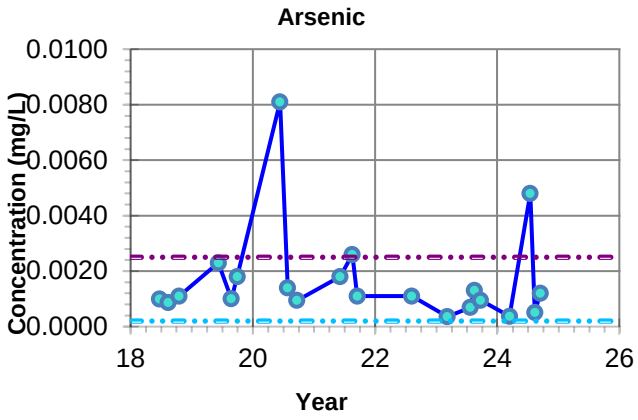
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

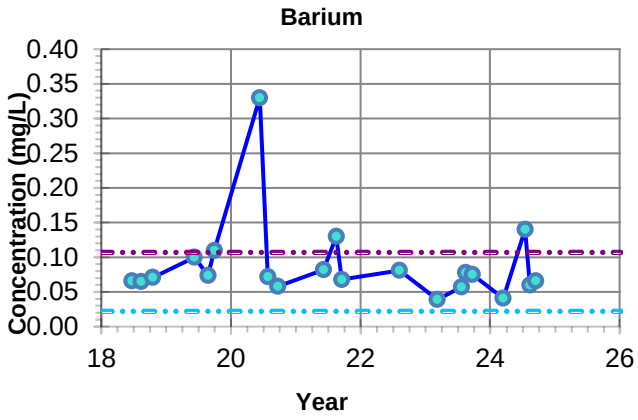
PROJECT NUMBER: 417085-54419-24200

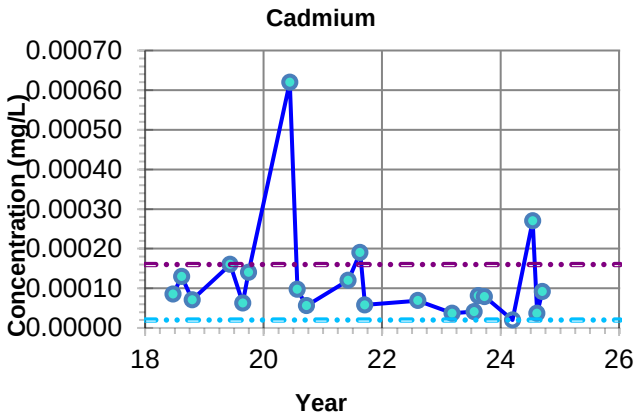
Figure F-18

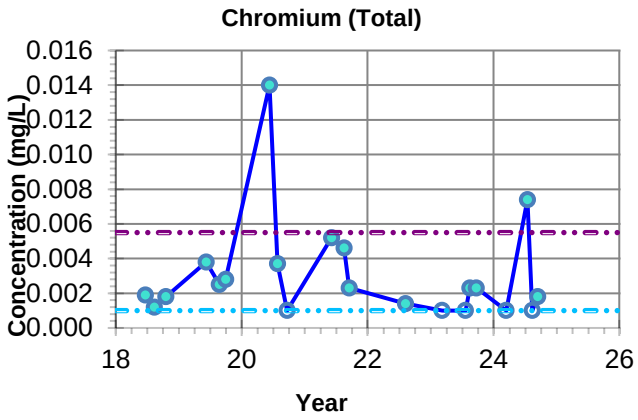
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

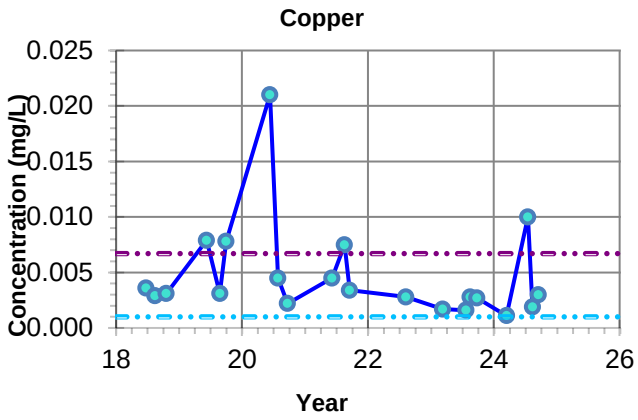












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-05 (Radar)

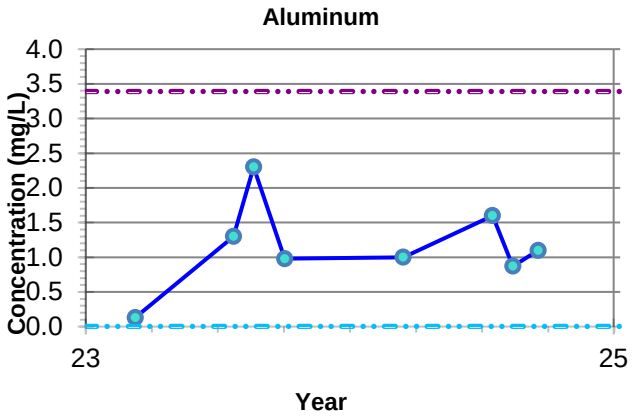
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

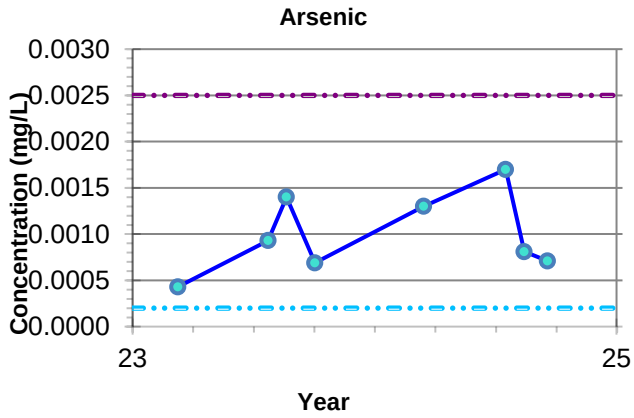
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

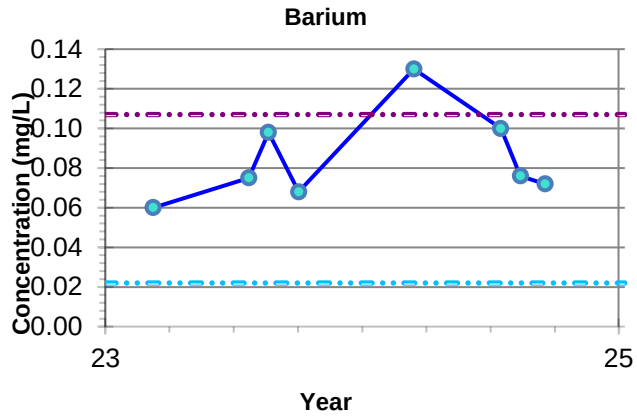
PROJECT NUMBER: 417085-54419-24200

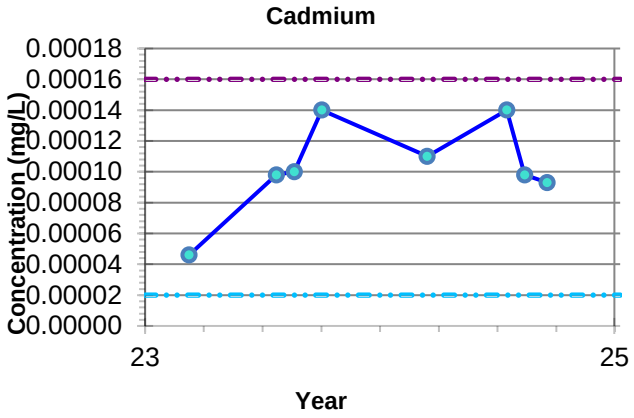
Figure F-19

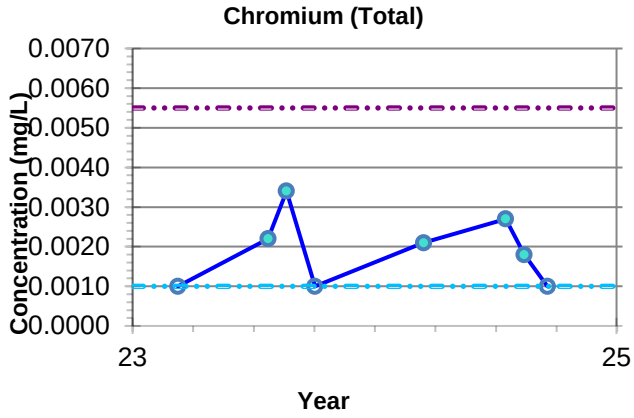
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

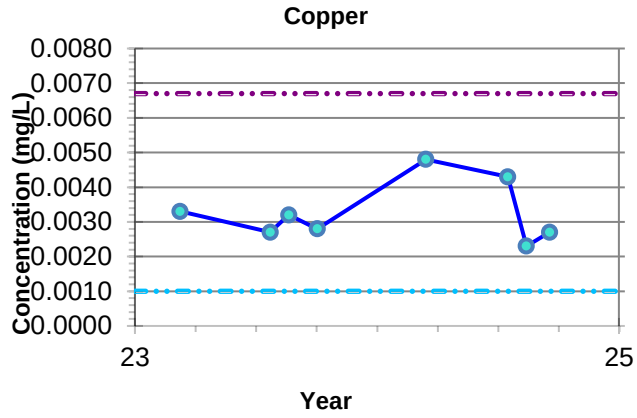












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-06 (Fort Good Hope)

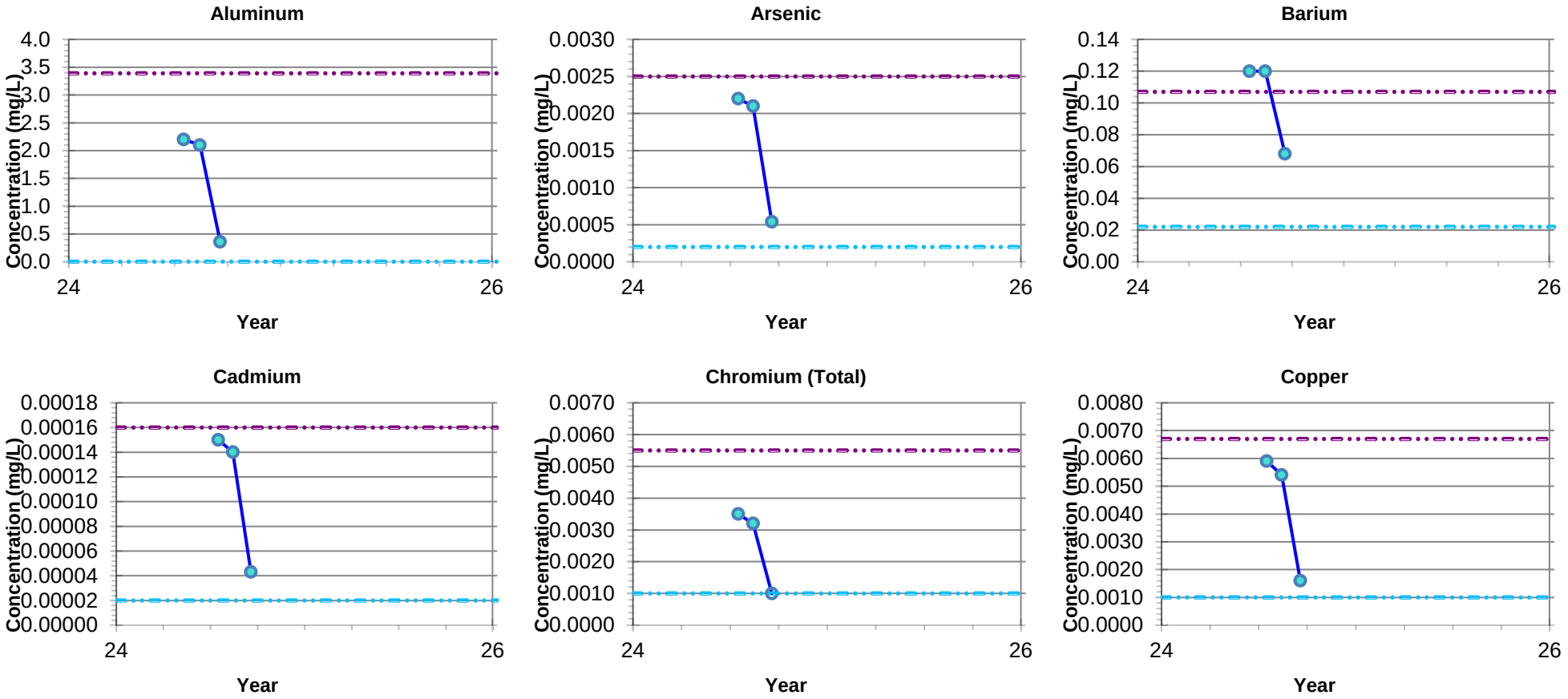
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

PROJECT NUMBER: 417085-54419-24200

Figure F-20

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

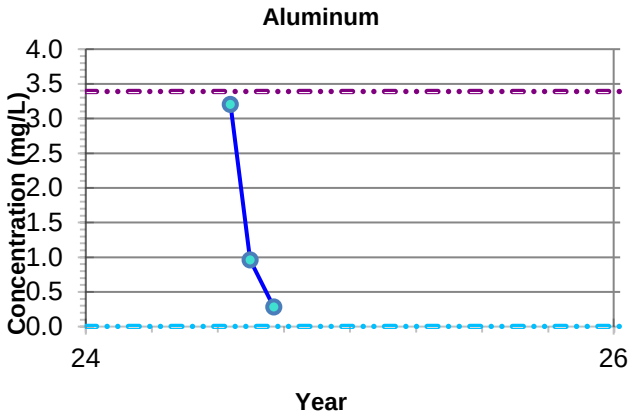
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-07 (Fort G H-Rampart)

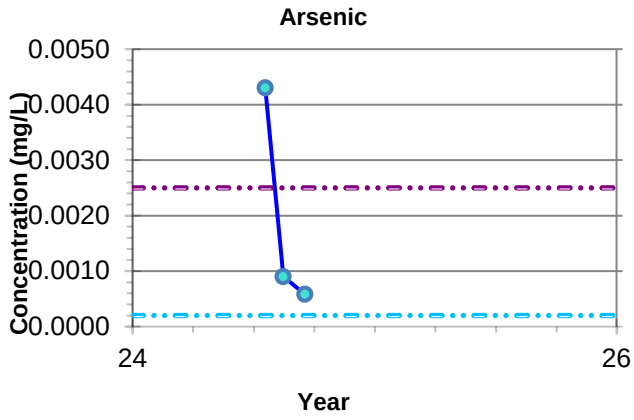
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

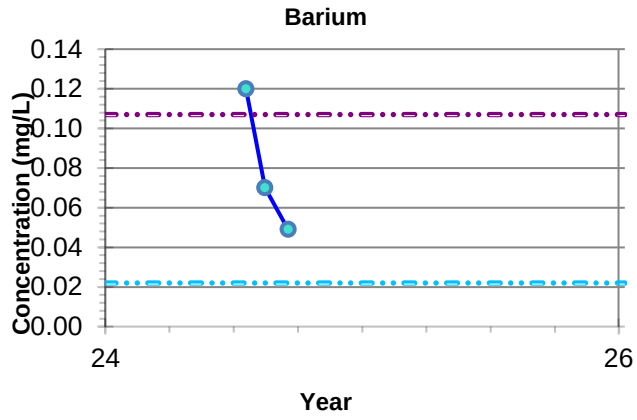
PROJECT NUMBER: 417085-54419-24200

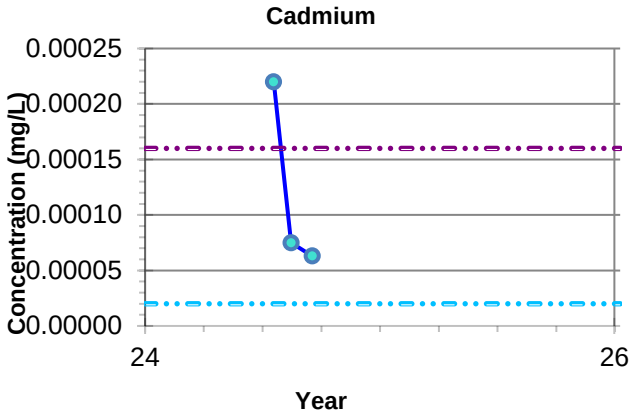
Figure F-21

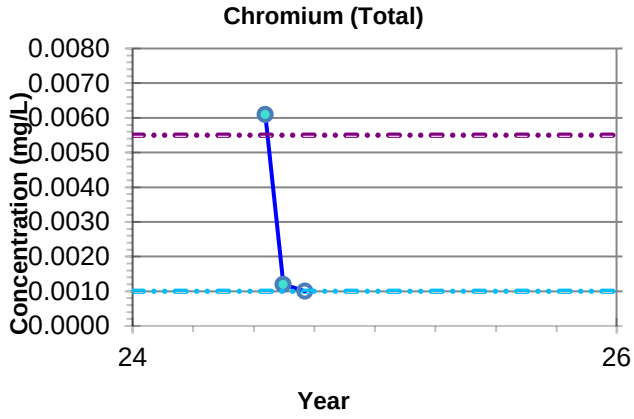
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

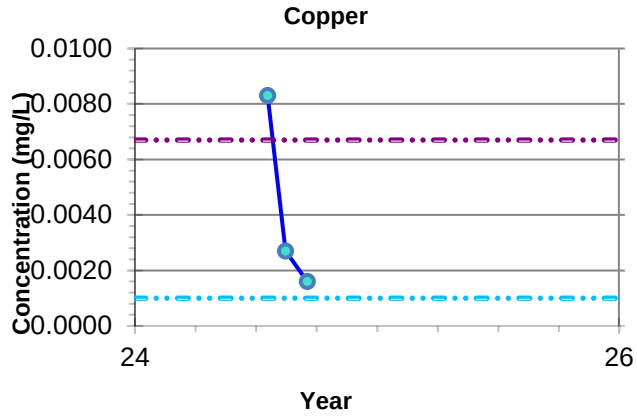












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-08 (Radar South)

09-Apr-2025	date	NA	edited by	JC	drawn by	NA	app by

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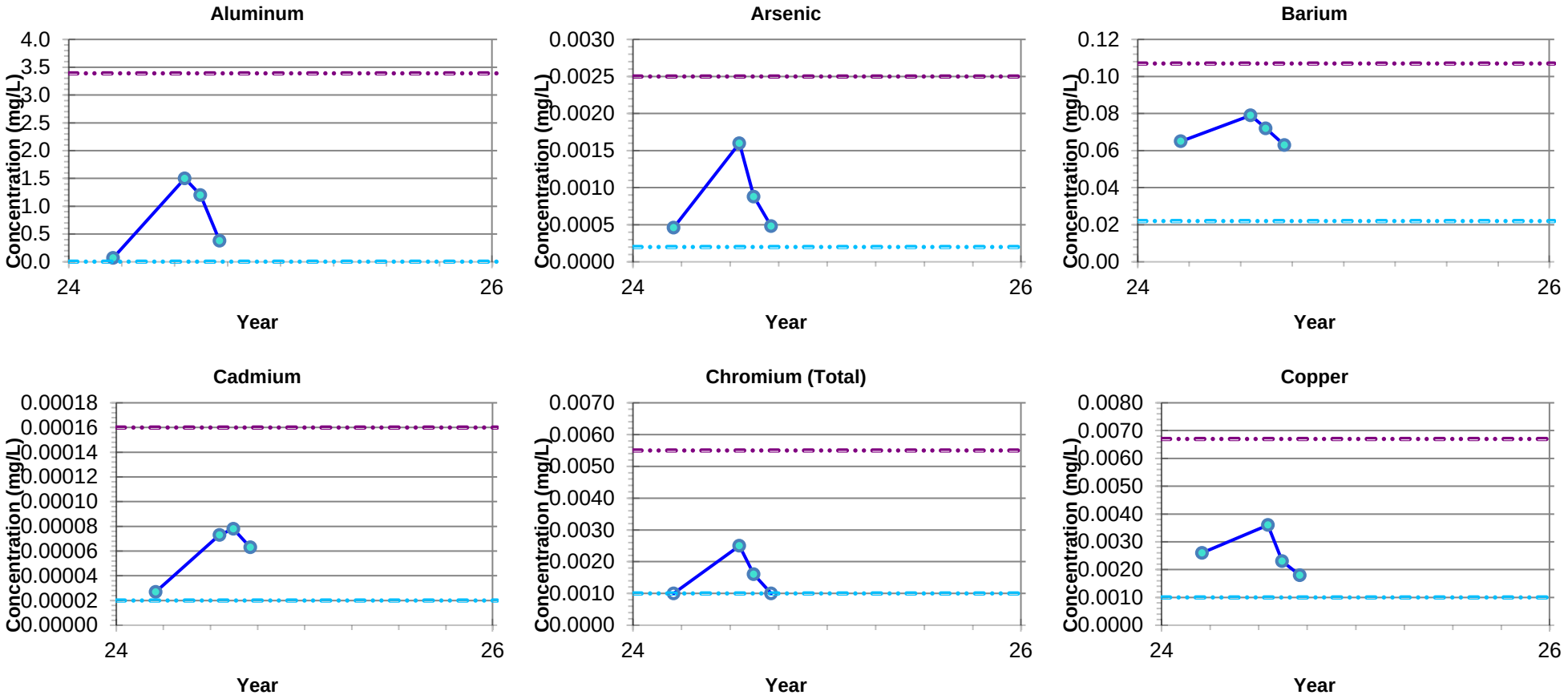
PROJECT NUMBER: 417085-54419-24200

Figure F-22

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

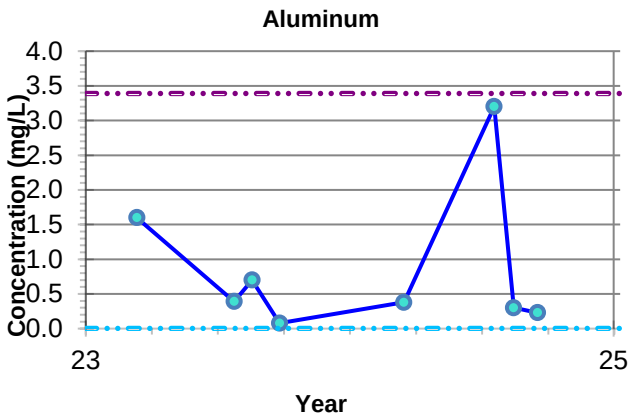
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-09 (Goose)

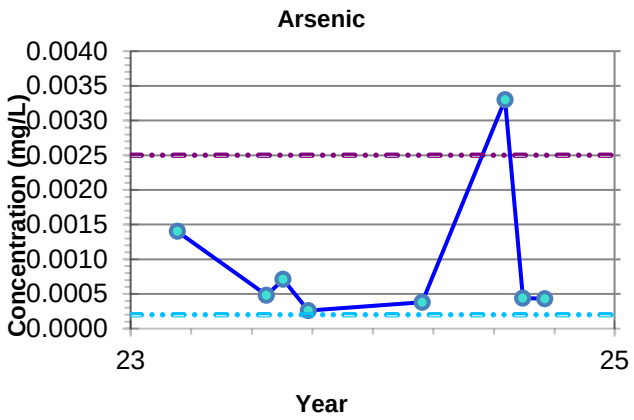
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

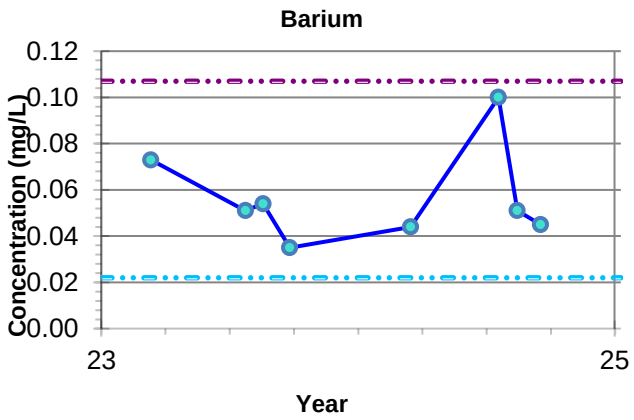
PROJECT NUMBER: 417085-54419-24200

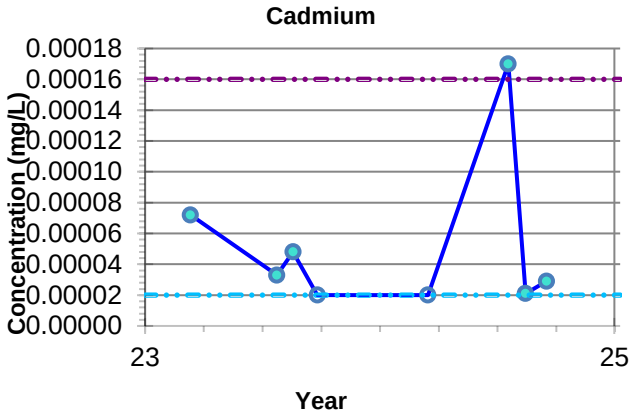
Figure F-23

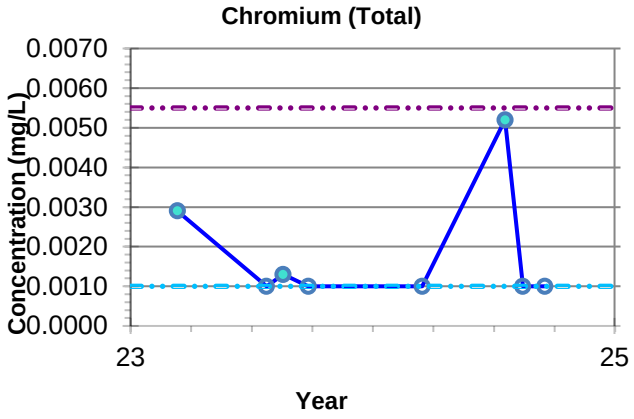
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

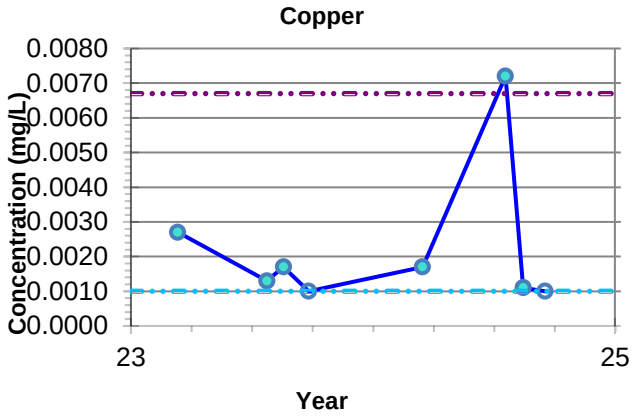












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-01 (Midway)

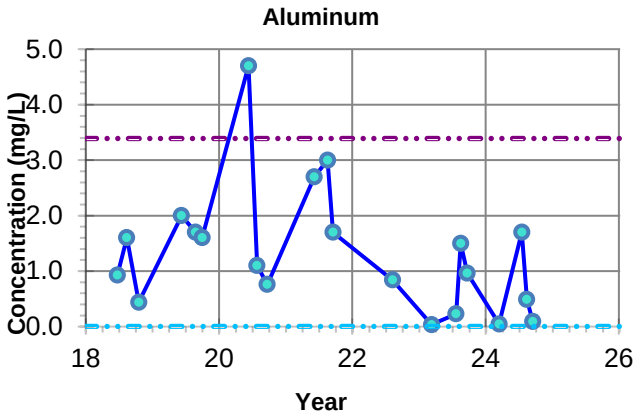
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

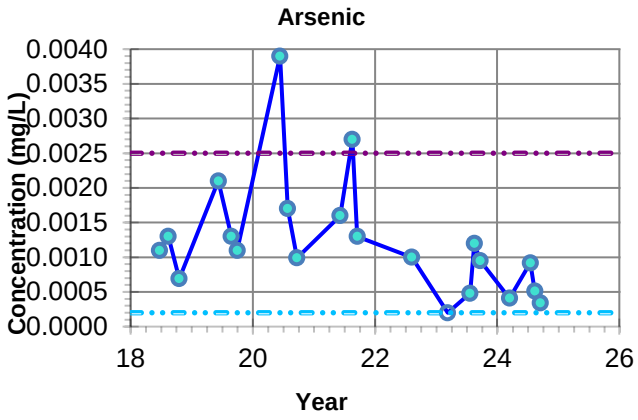
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

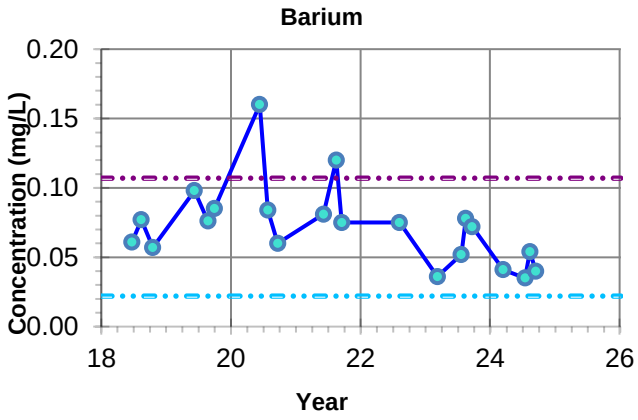
PROJECT NUMBER: 417085-54419-24200

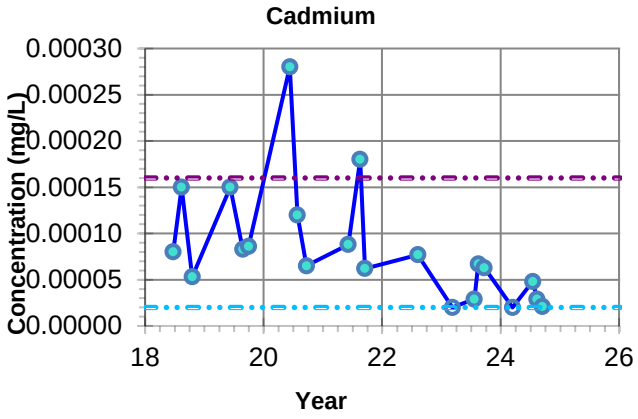
Figure F-24

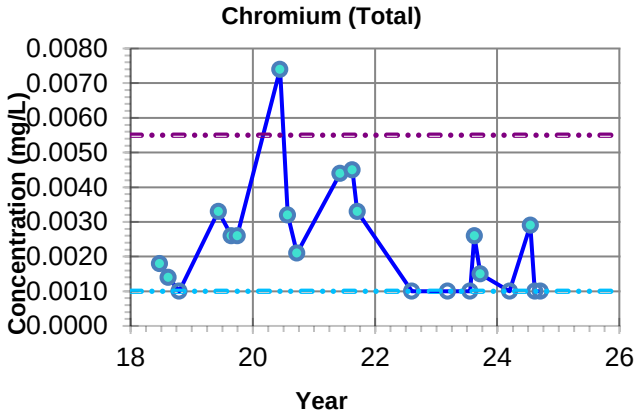
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

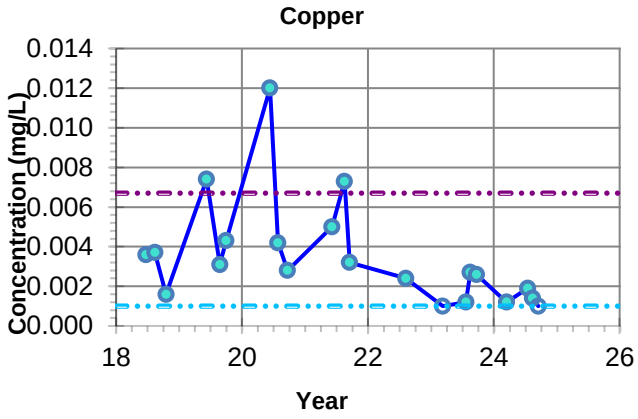












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-02 (10 mile)

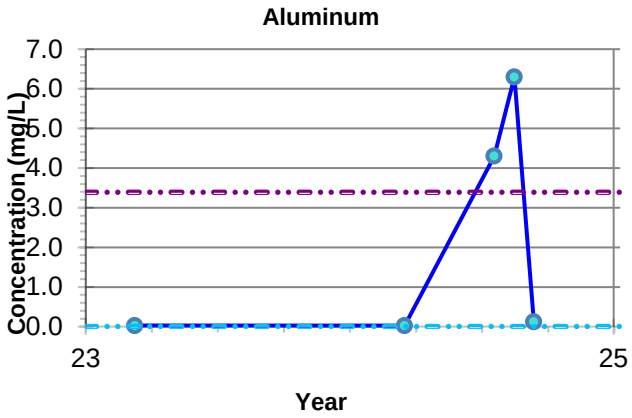
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

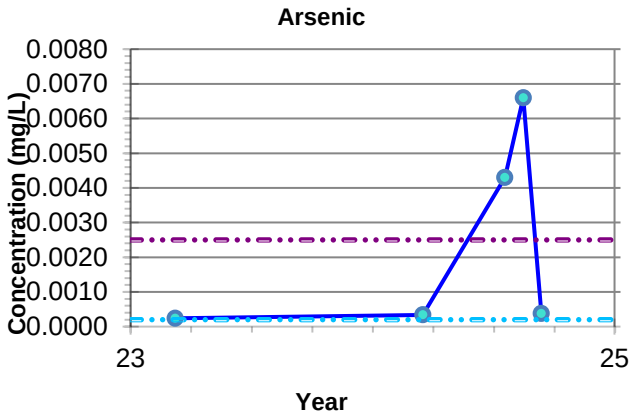
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

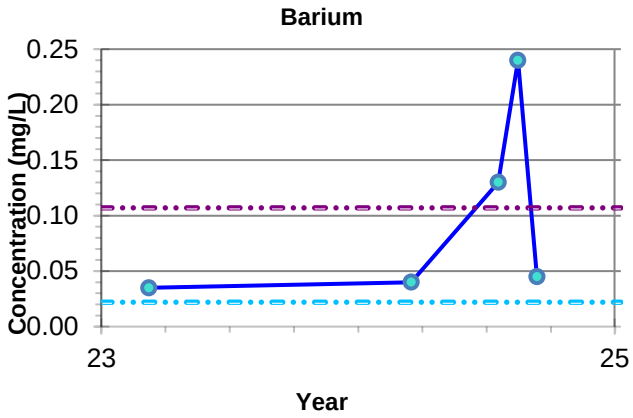
PROJECT NUMBER: 417085-54419-24200

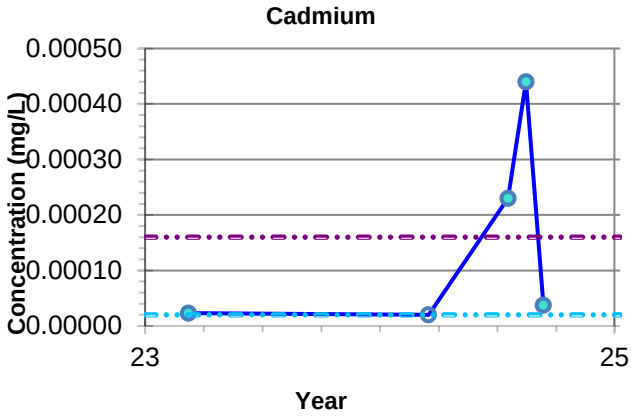
Figure F-25

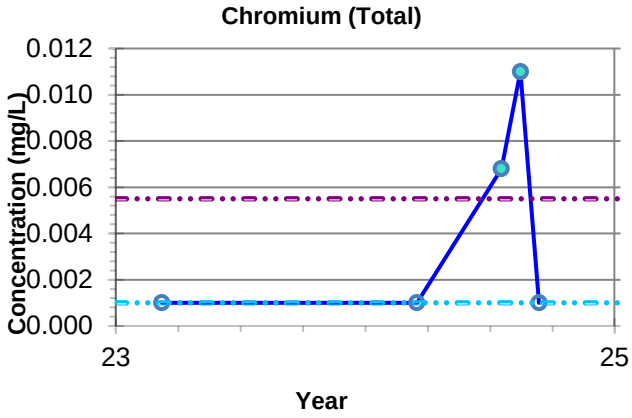
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

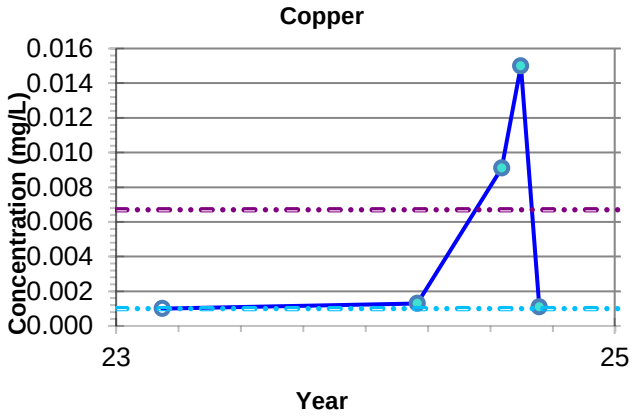












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

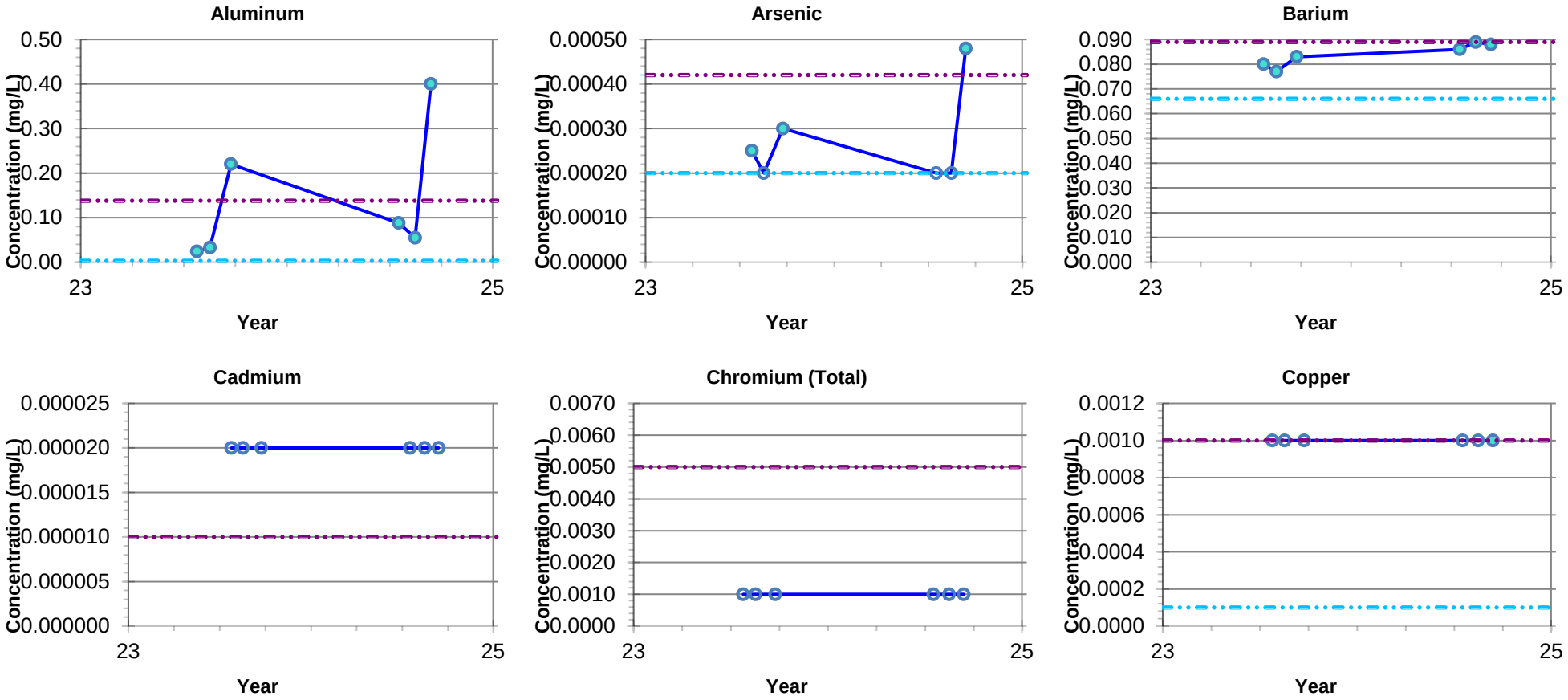
Hydrochemical Control Charts
Monitoring Well: AEMP-US-03 (Norman Wells U/S)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

PROJECT NUMBER: 417085-54419-24200

Figure F-26

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

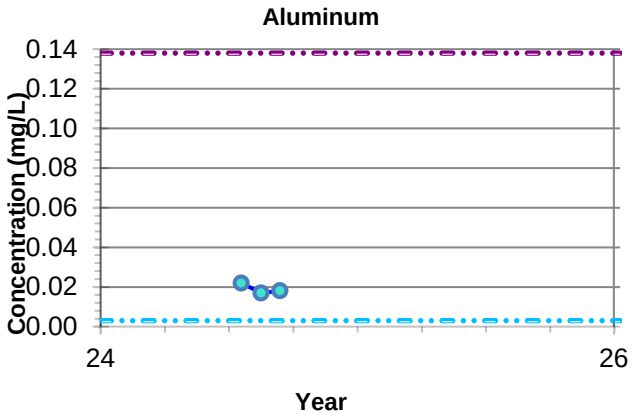
Hydrochemical Control Charts
Monitoring Well: AEMP-US-04 (Upr Bosworth Crk)

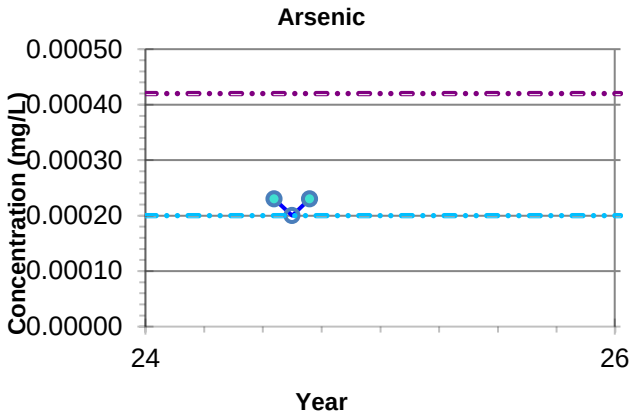
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

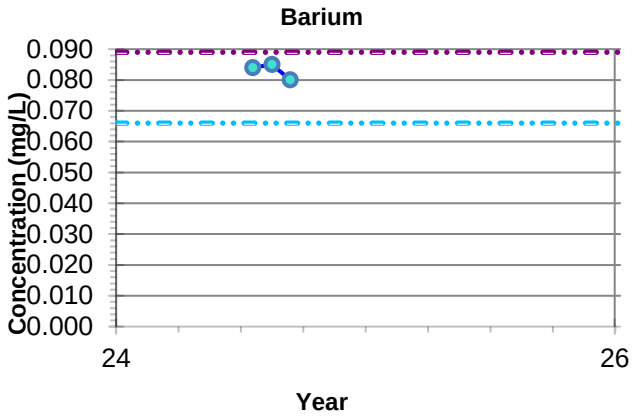
PROJECT NUMBER: 417085-54419-24200

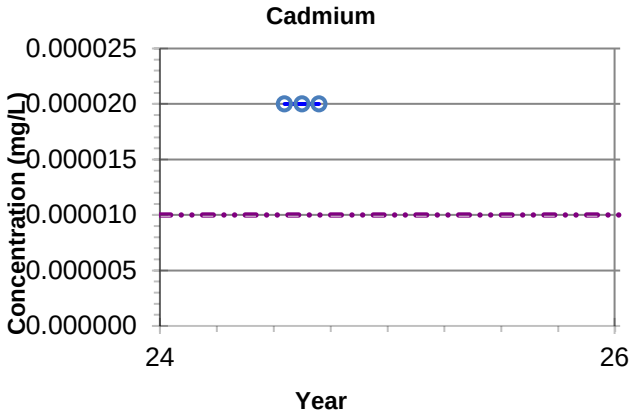
Figure F-27

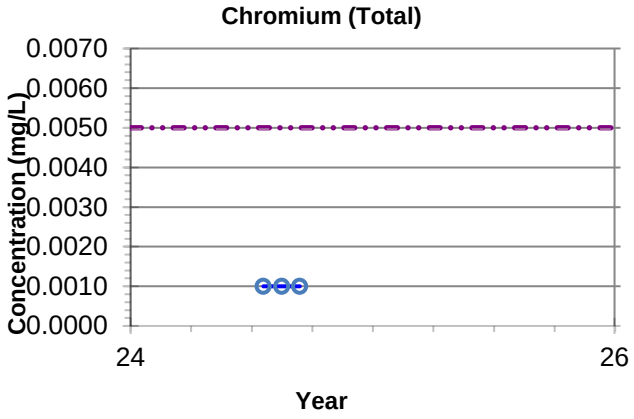
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

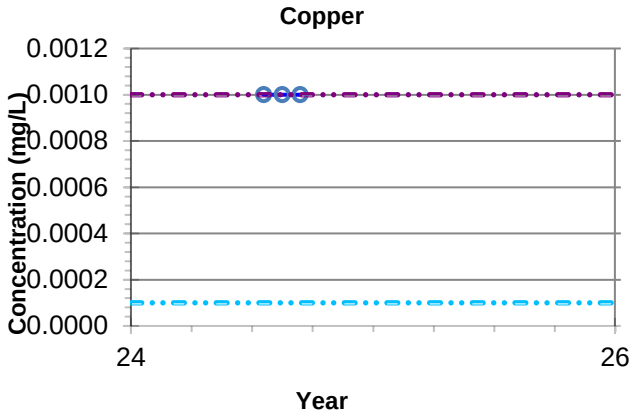












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-05 (Bosworth Creek)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

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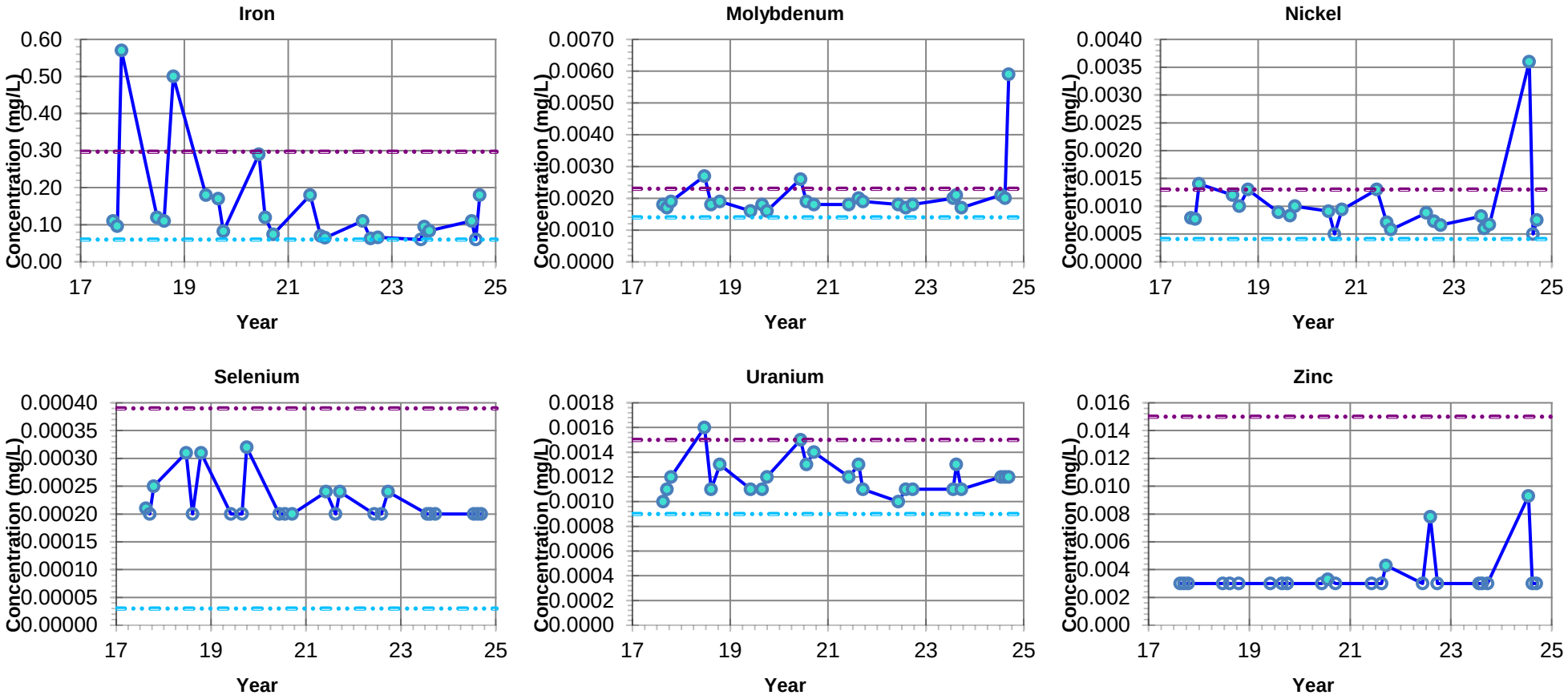
PROJECT NUMBER: 417085-54419-24200

Figure F-28

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

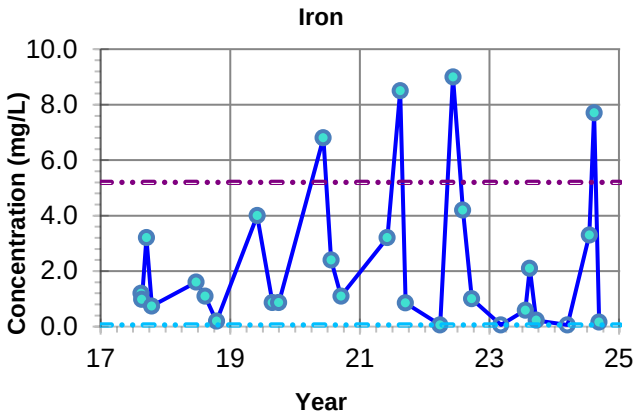
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-01 (Lwr Bosworth Crk)

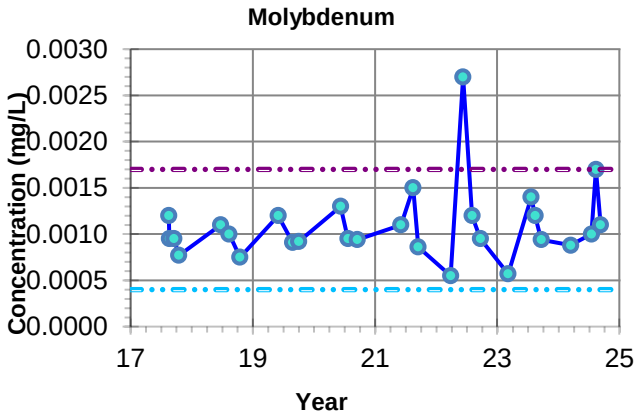
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

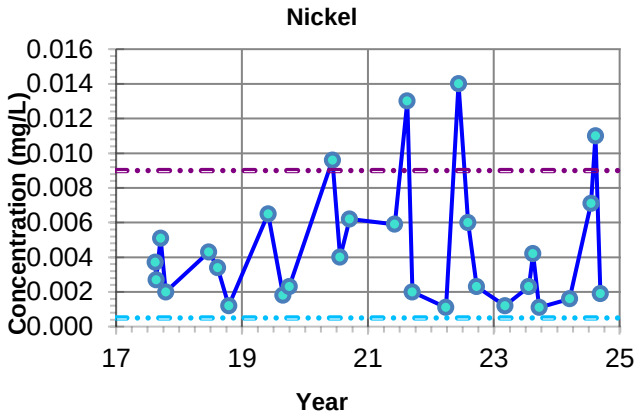
PROJECT NUMBER: 417085-54419-24200

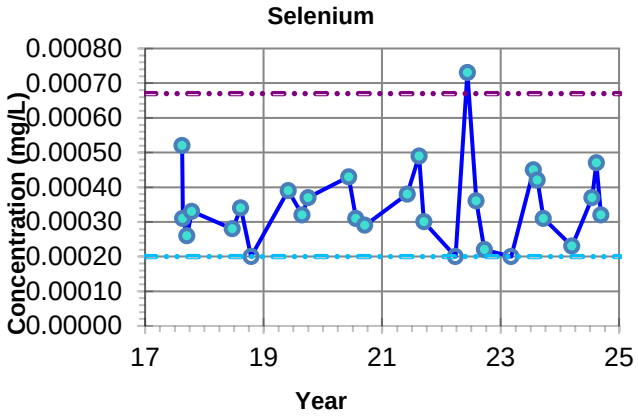
Figure F-29

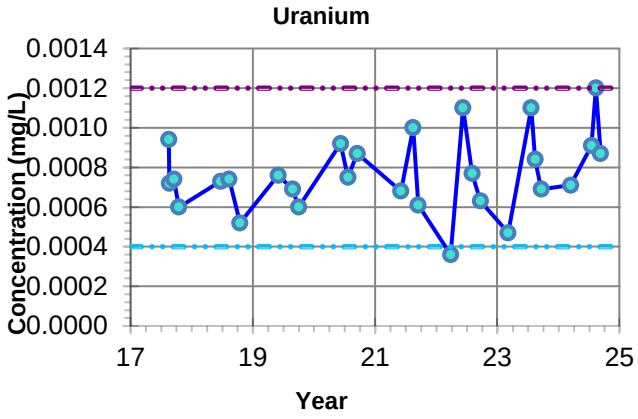
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

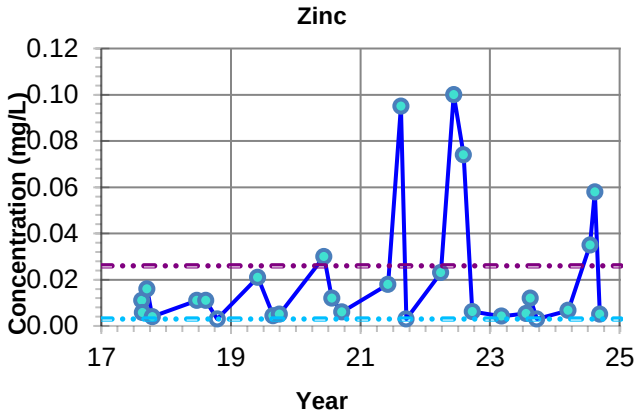












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-02 (Marine Dock)

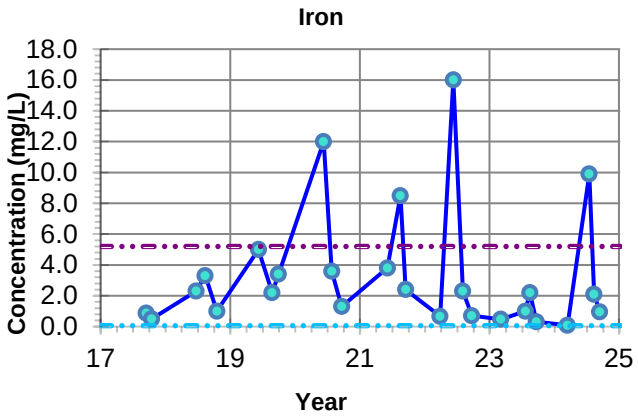
09-Apr-2025	date	NA	edited by	JC	drawn by	NA	app by

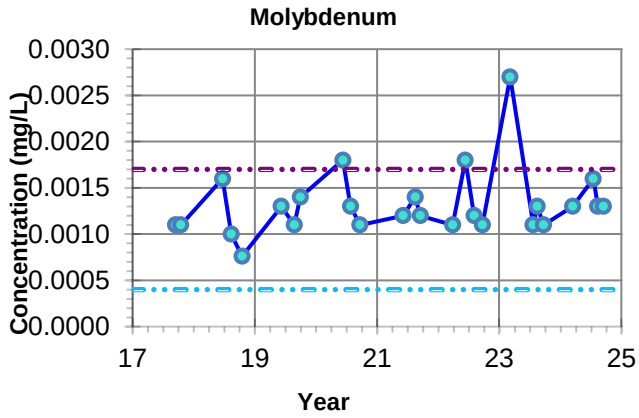
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

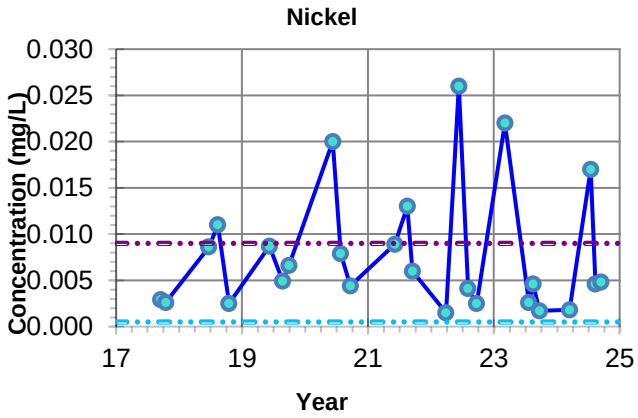
PROJECT NUMBER: 417085-54419-24200

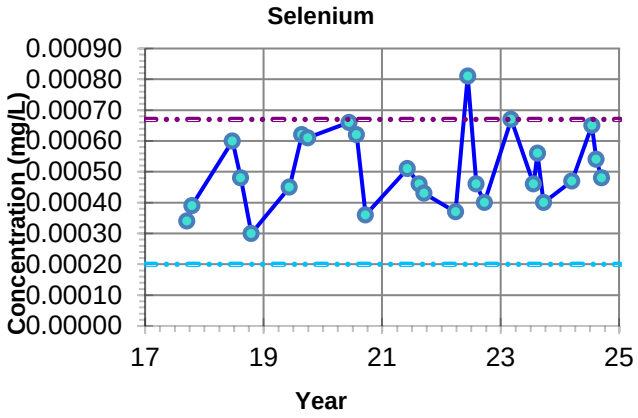
Figure F-30

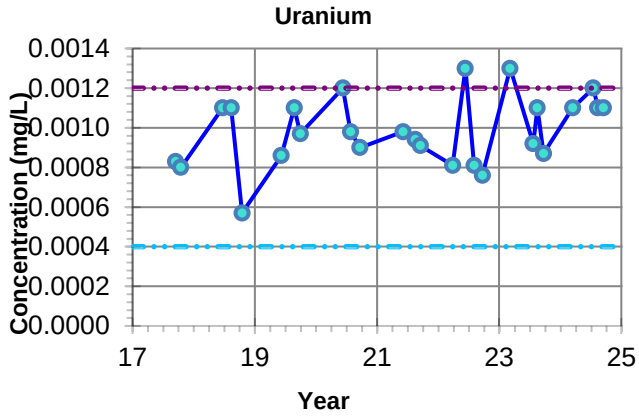
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

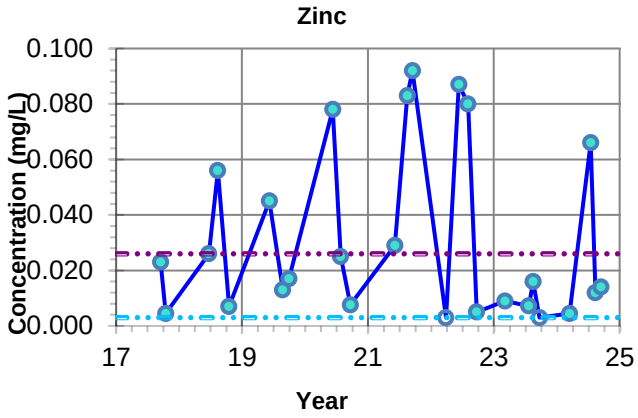












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

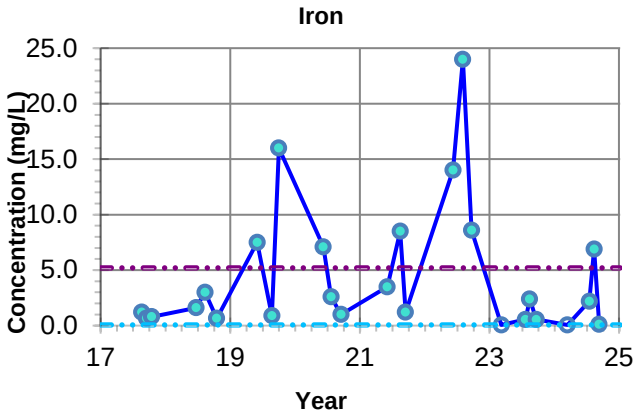
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-03 (Island 3)

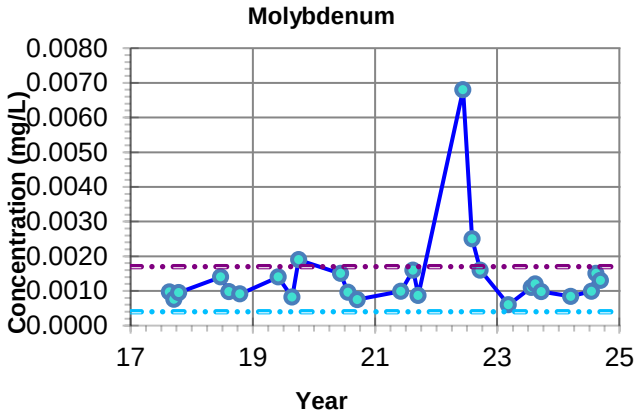
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

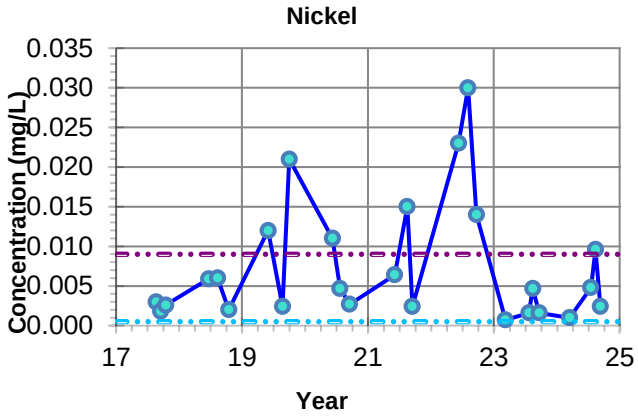
PROJECT NUMBER: 417085-54419-24200

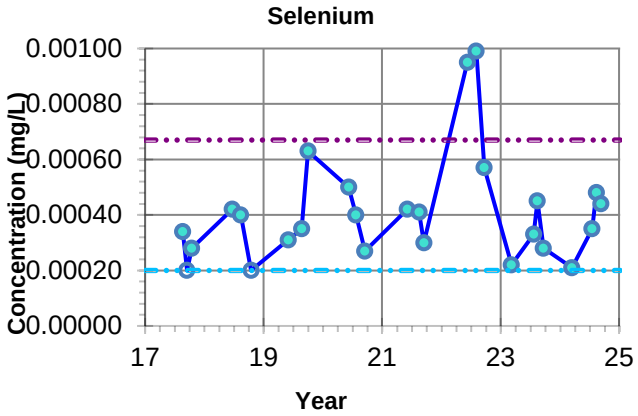
Figure F-31

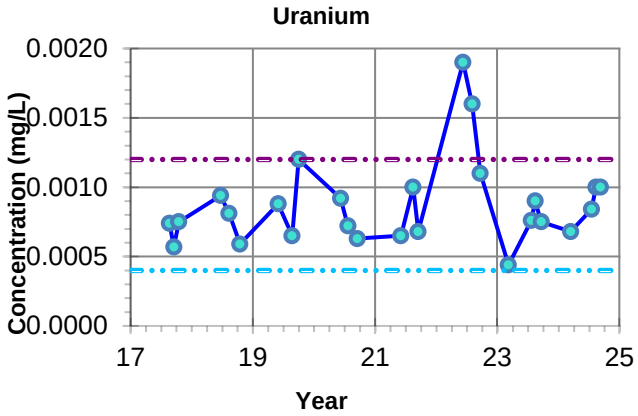
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

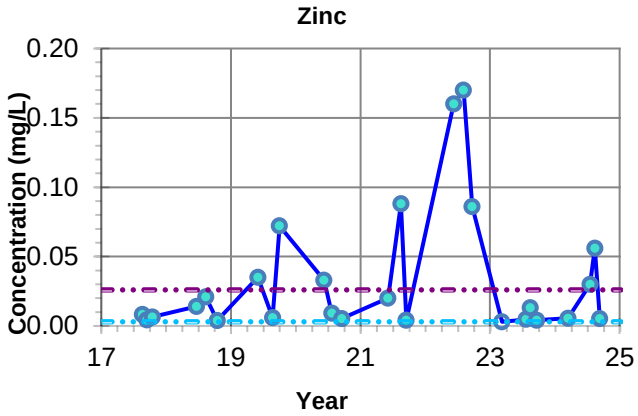












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

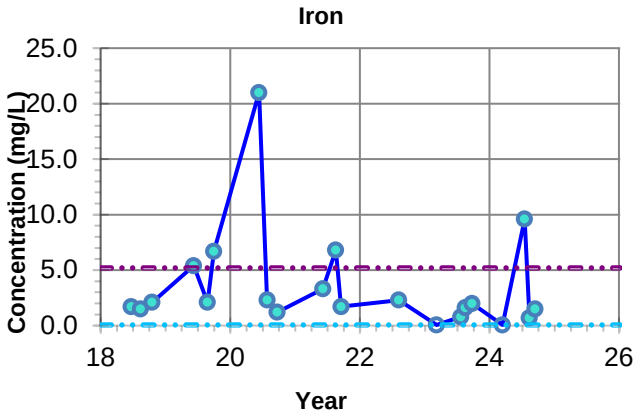
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-04 (Refinery)

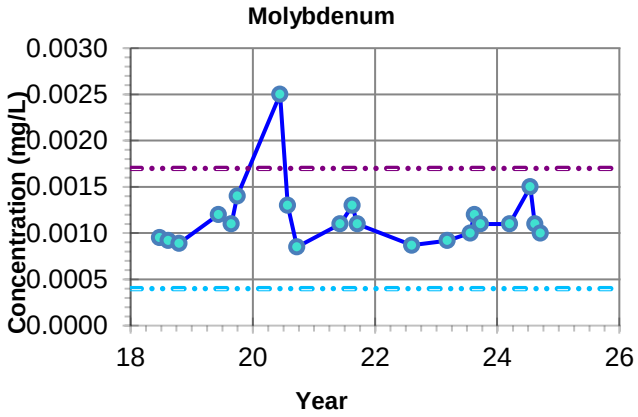
09-Apr-2025	date	NA	edited by	JC	drawn by	NA	app by

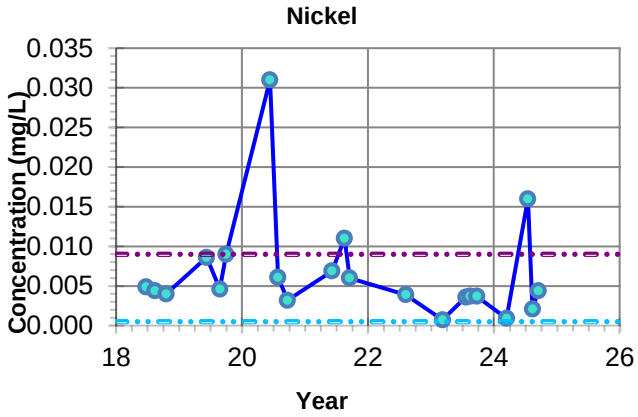
PROJECT NUMBER: 417085-54419-24200

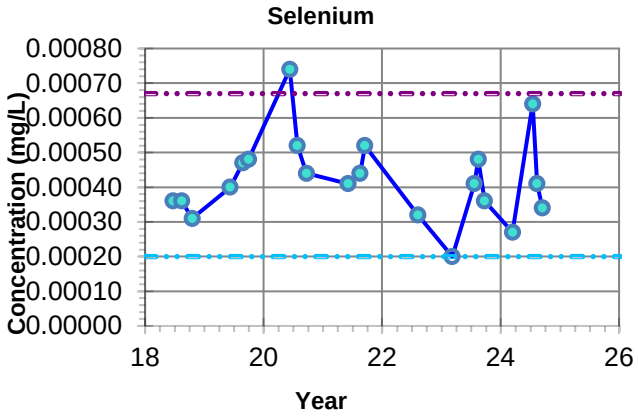
Figure F-32

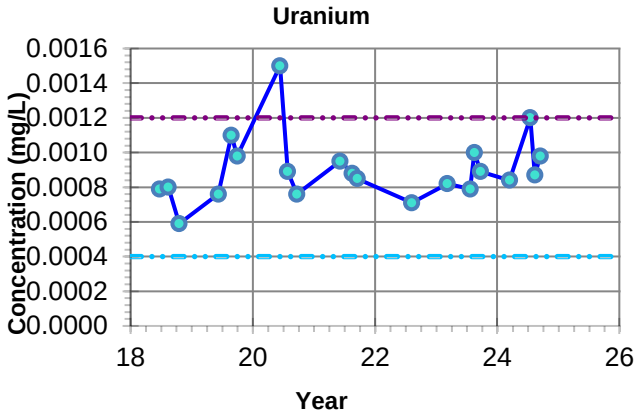
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

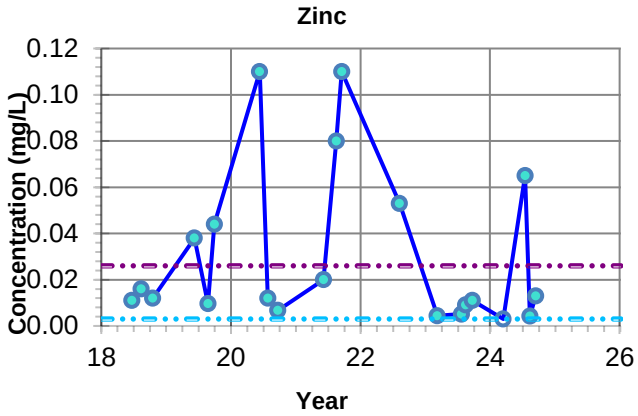












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-05 (Radar)

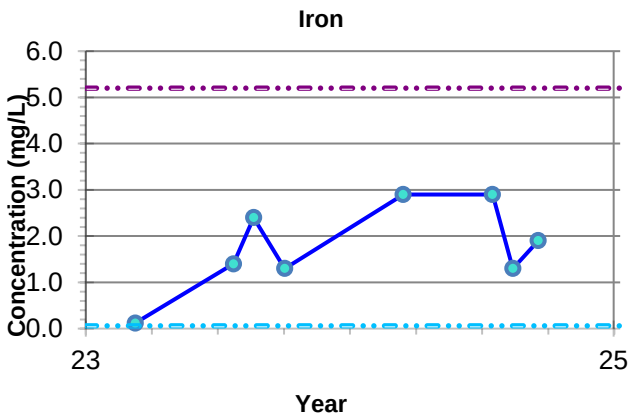
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

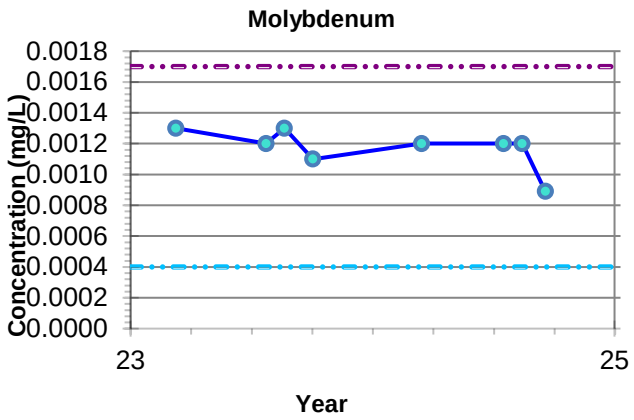
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

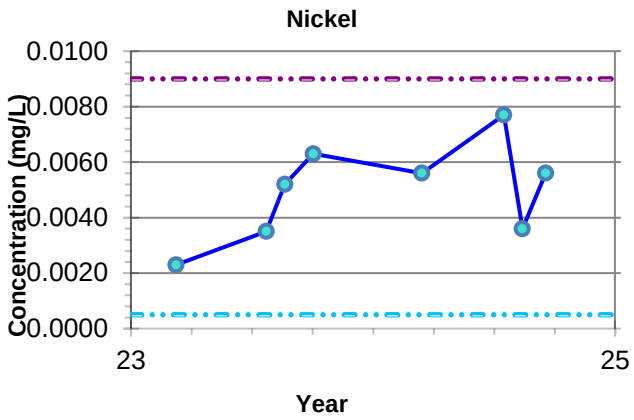
PROJECT NUMBER: 417085-54419-24200

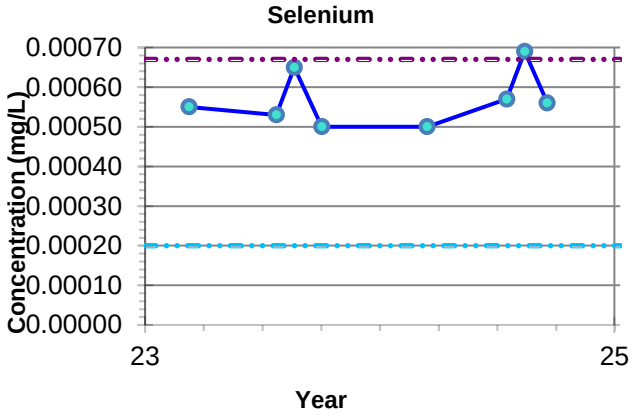
Figure F-33

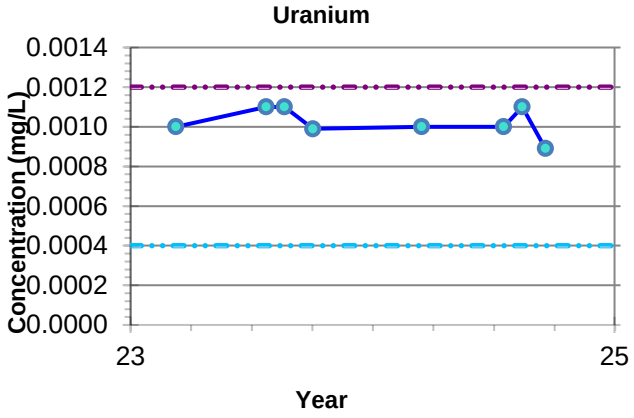
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

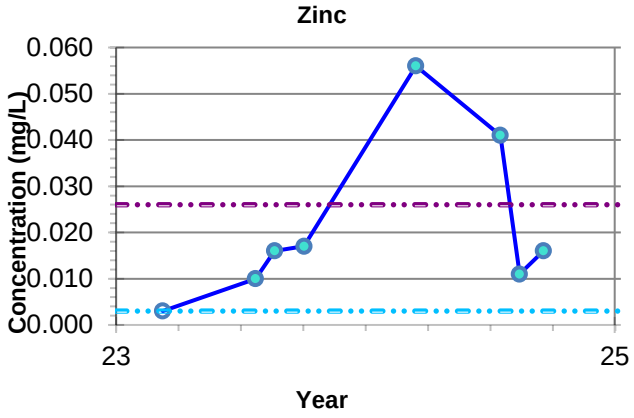












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-06 (Fort Good Hope)

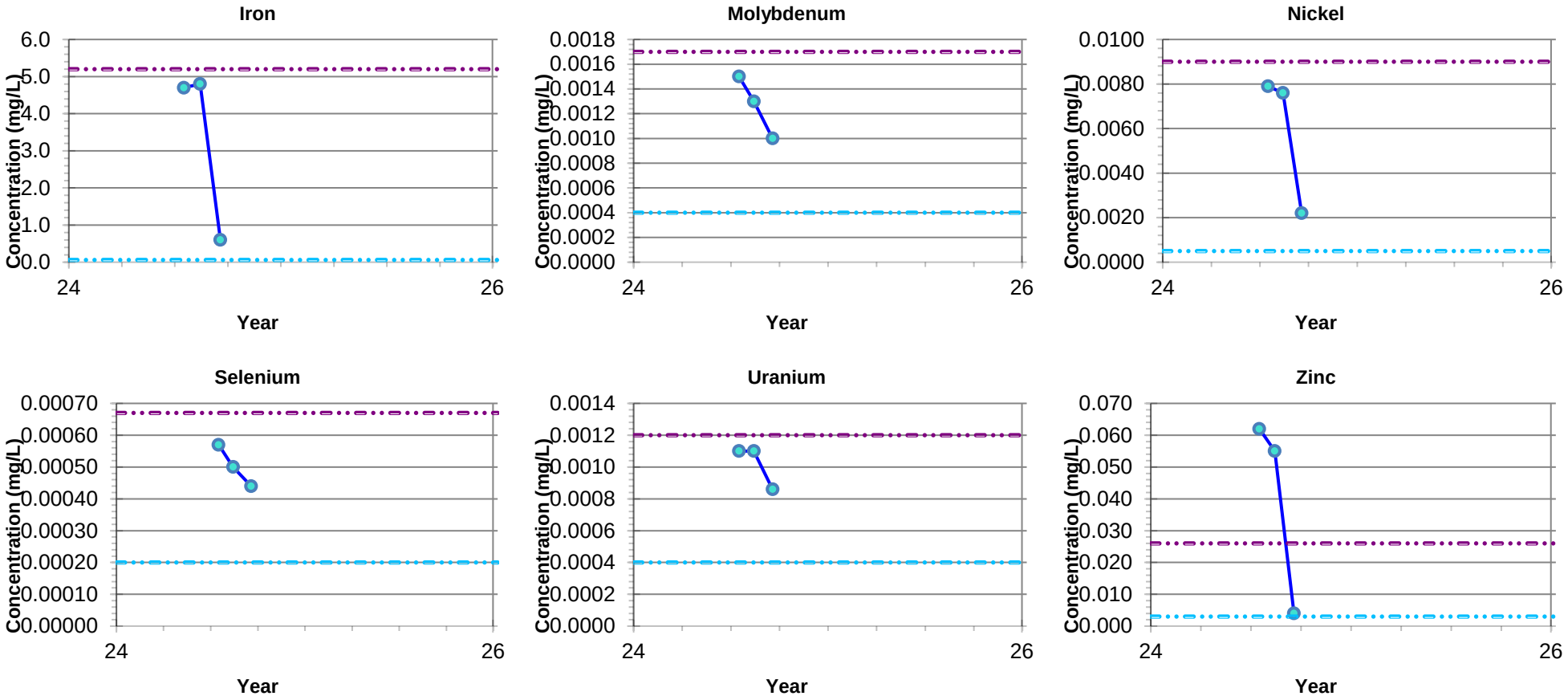
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

PROJECT NUMBER: 417085-54419-24200

Figure F-34

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

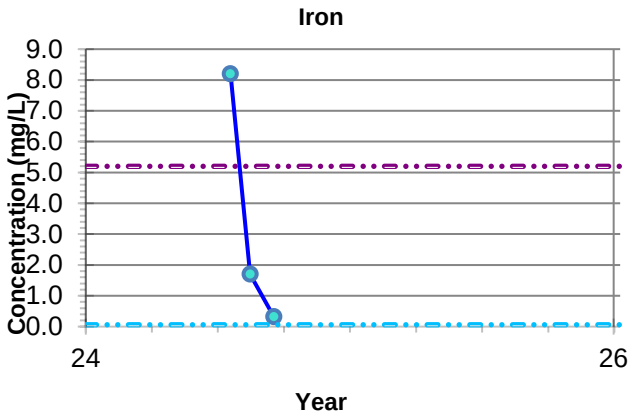
Hydrochemical Control Charts
Monitoring Well: AEMP-DS-07 (Fort G H-Rampart)

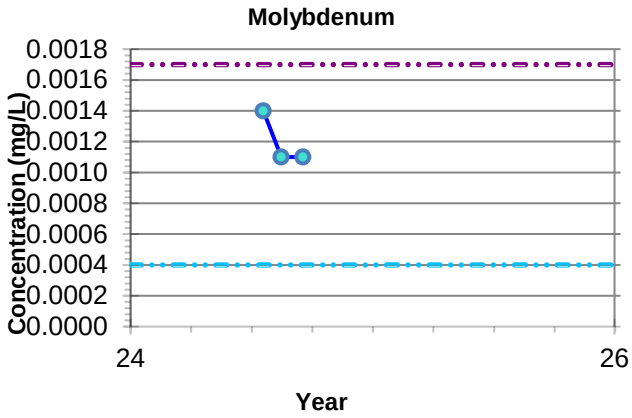
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

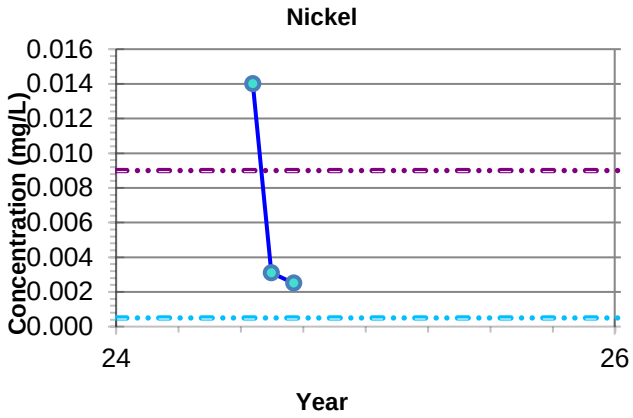
PROJECT NUMBER: 417085-54419-24200

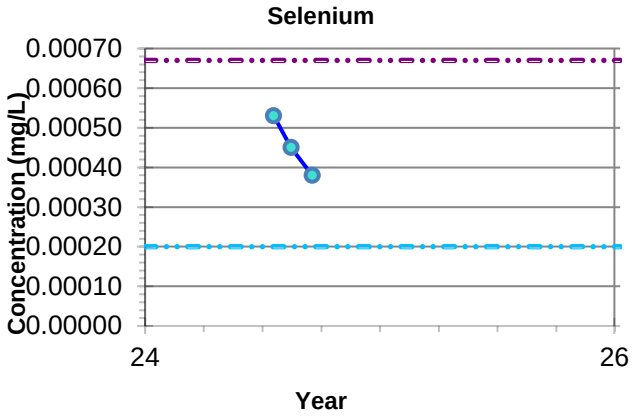
Figure F-35

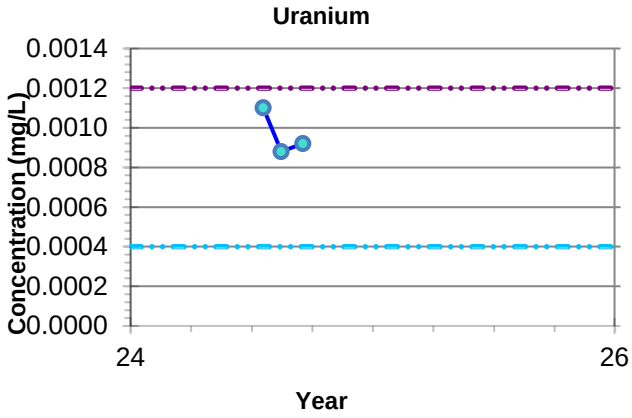
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

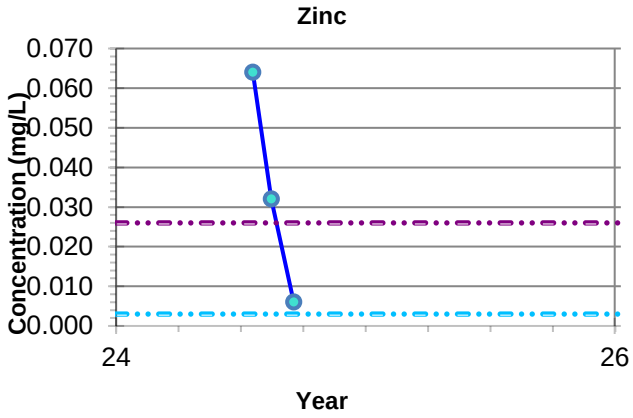












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-08 (Radar South)

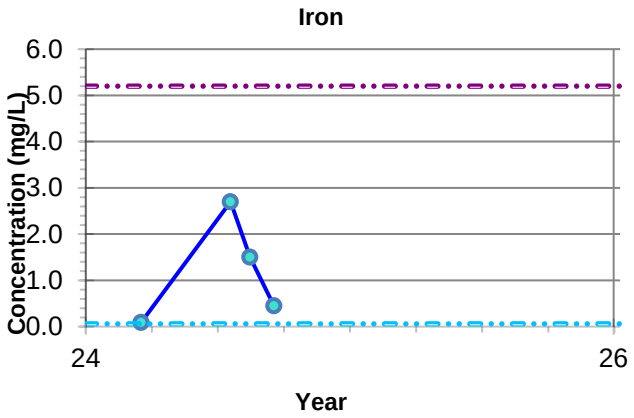
09-Apr-2025	date	NA	edited by	JC	drawn by	NA	app by

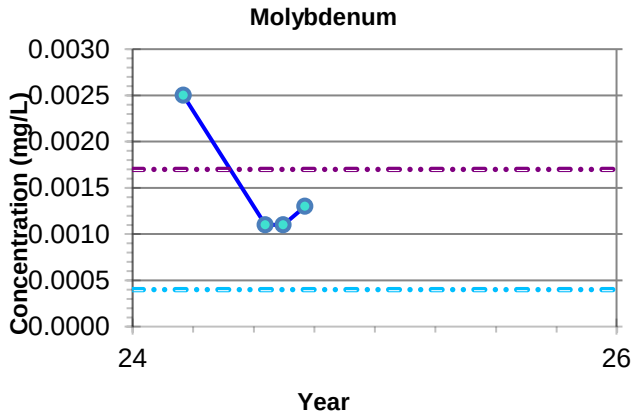
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

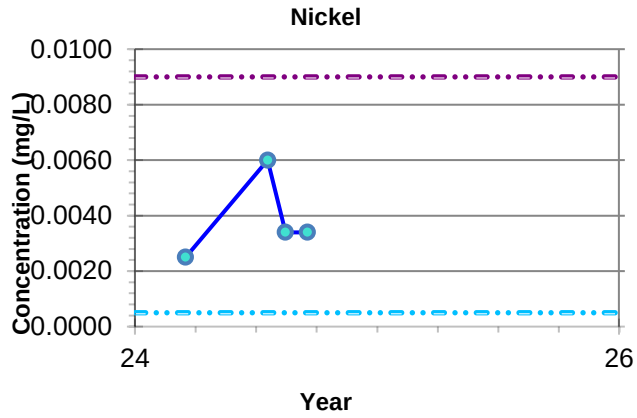
PROJECT NUMBER: 417085-54419-24200

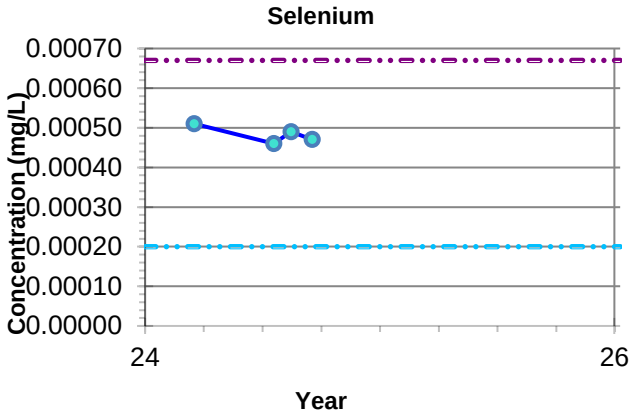
Figure F-36

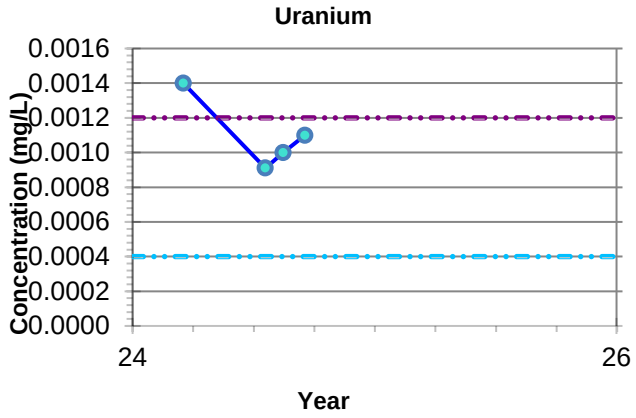
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

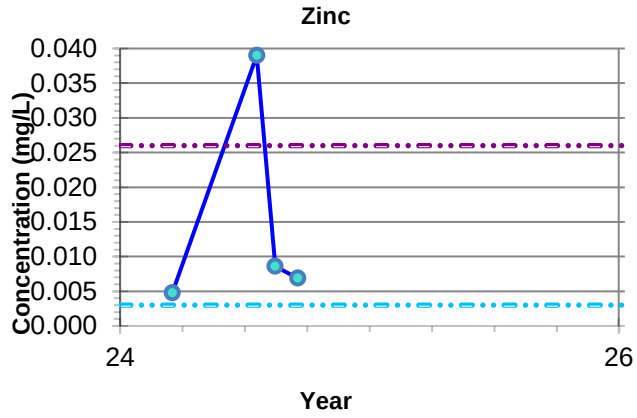












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-DS-09 (Goose)

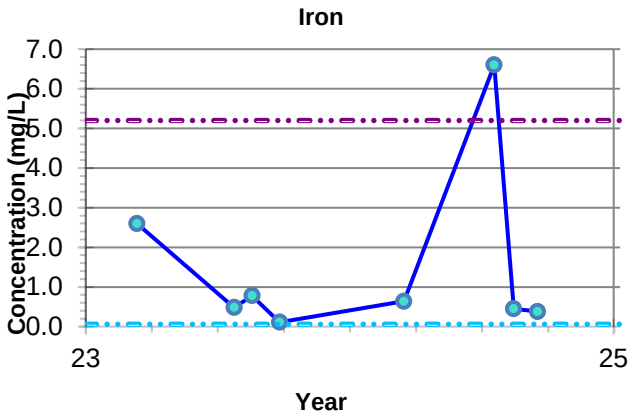
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

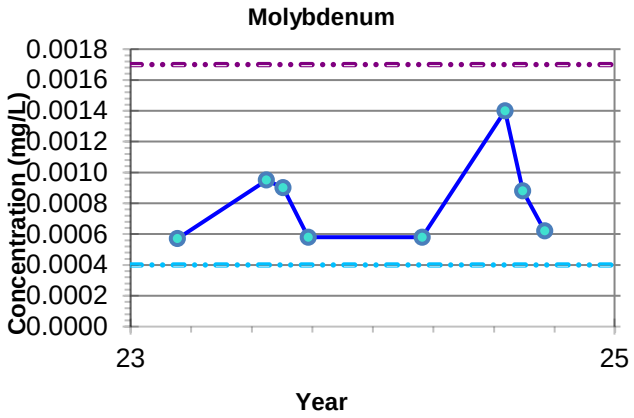
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

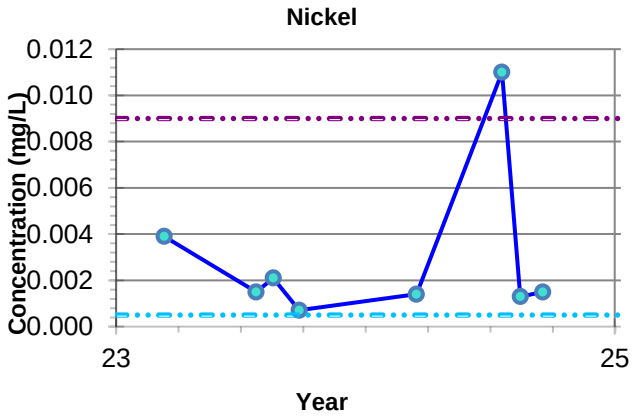
PROJECT NUMBER: 417085-54419-24200

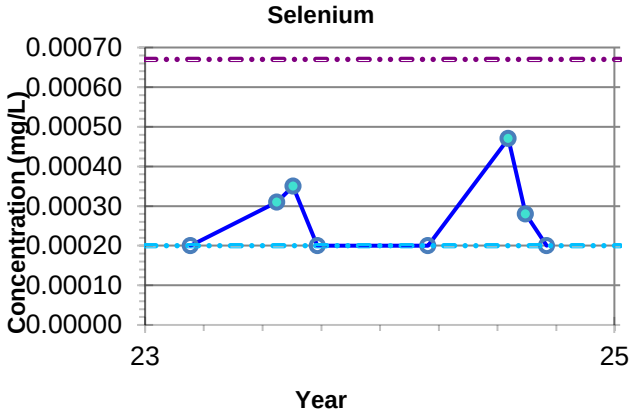
Figure F-37

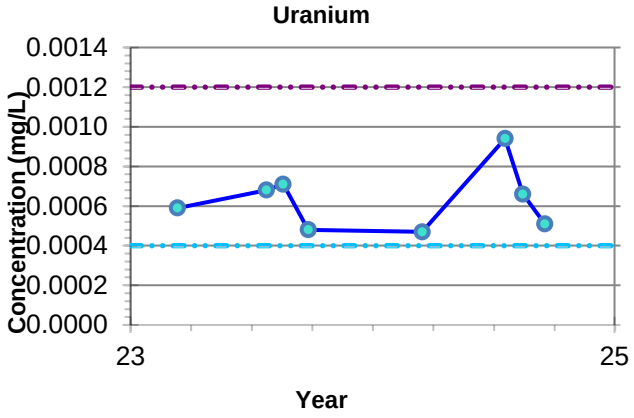
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

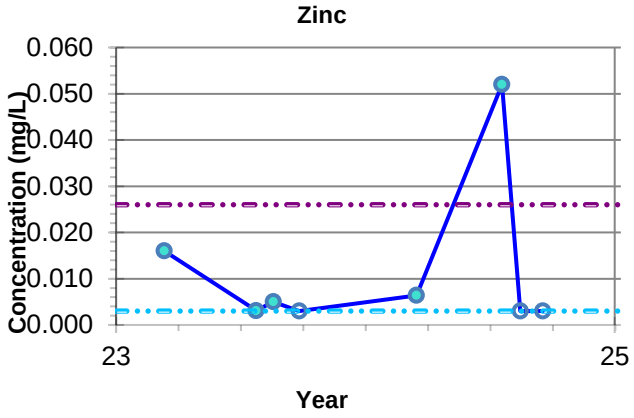












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-01 (Midway)

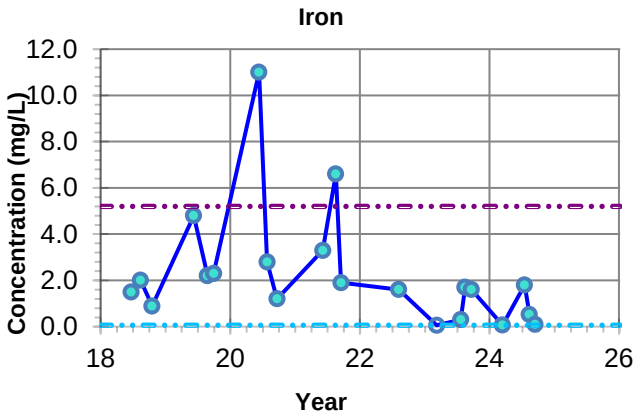
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

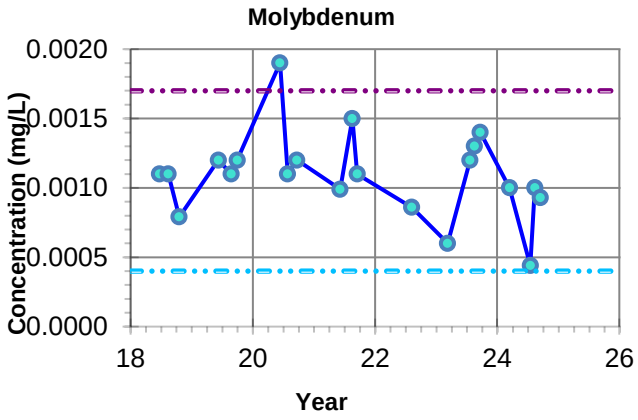
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

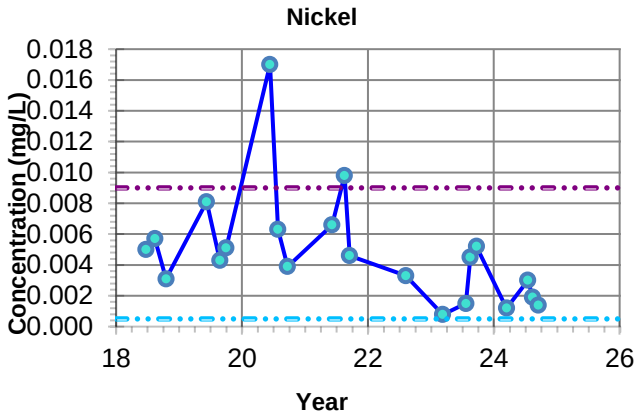
PROJECT NUMBER: 417085-54419-24200

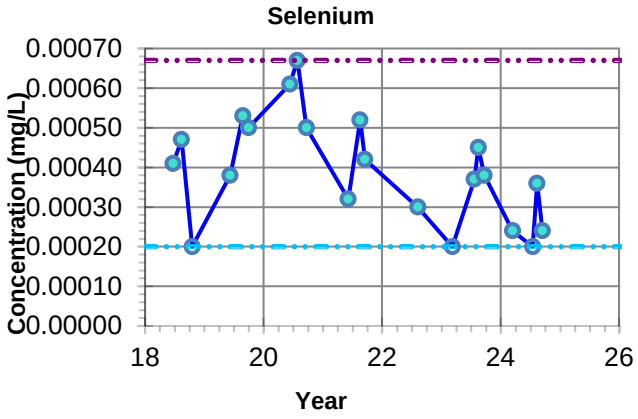
Figure F-38

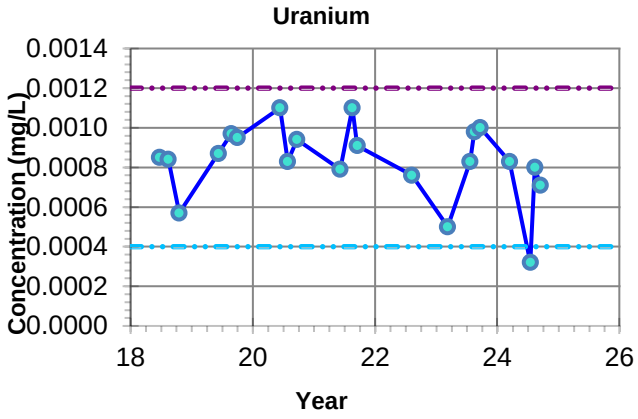
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

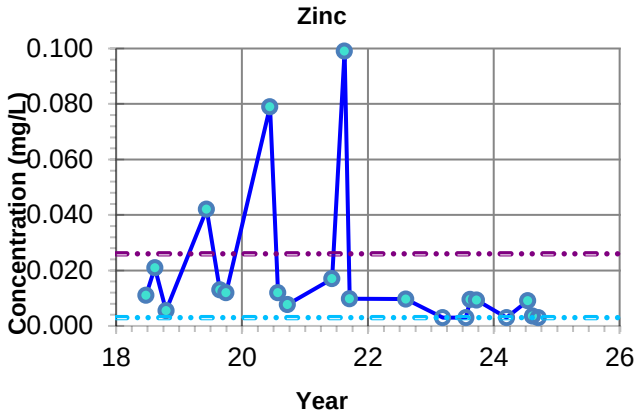












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

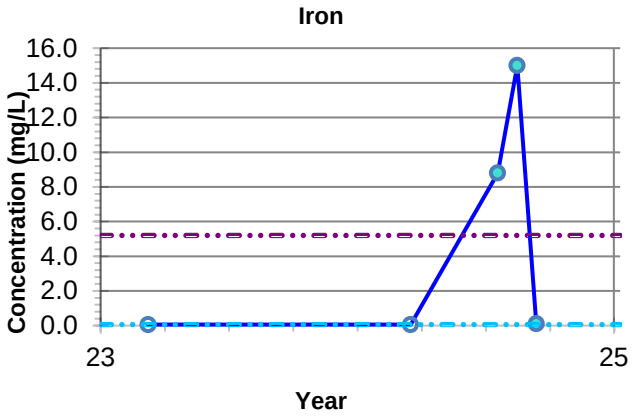
Hydrochemical Control Charts
Monitoring Well: AEMP-US-02 (10 mile)

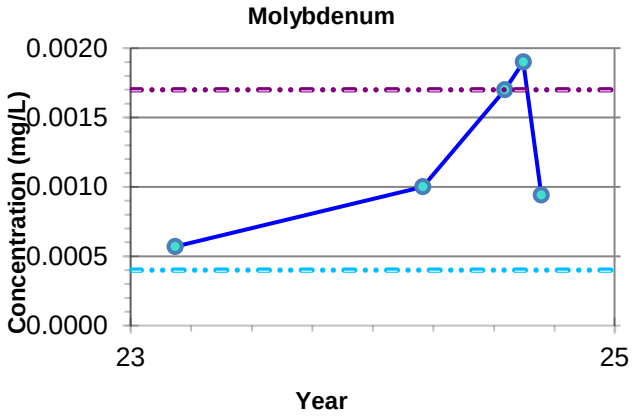
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

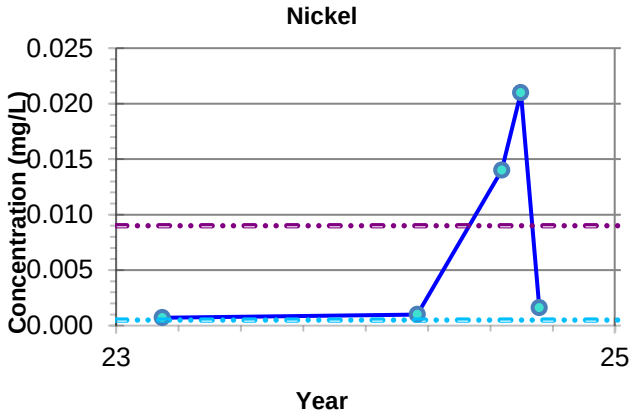
PROJECT NUMBER: 417085-54419-24200

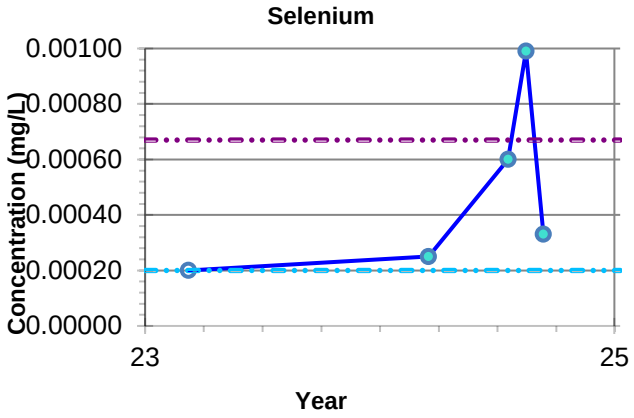
Figure F-39

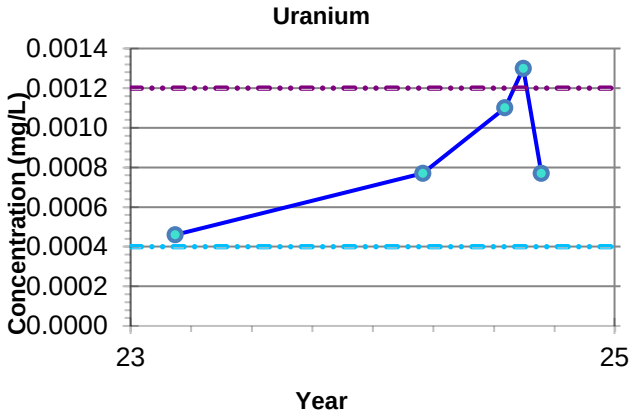
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

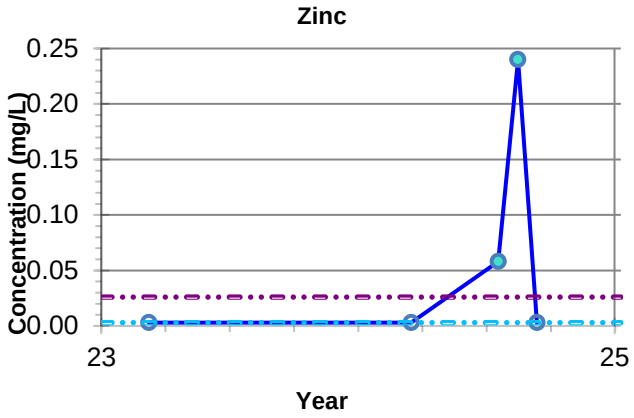












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

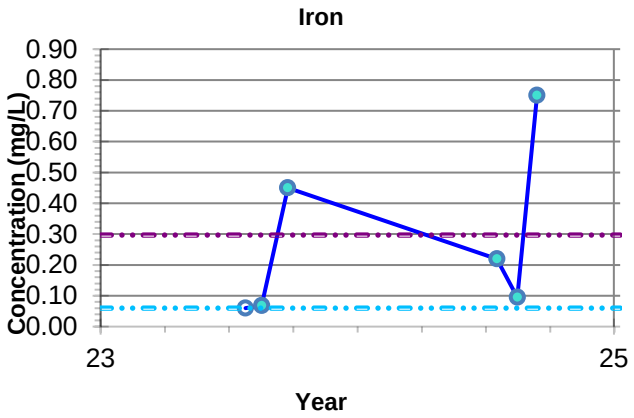
Hydrochemical Control Charts
Monitoring Well: AEMP-US-03 (Norman Wells U/S)

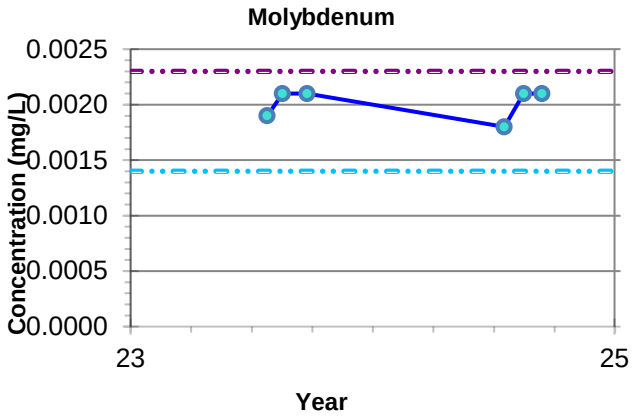
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

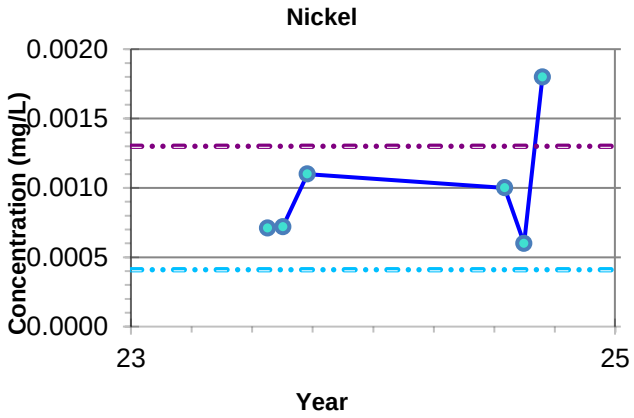
PROJECT NUMBER: 417085-54419-24200

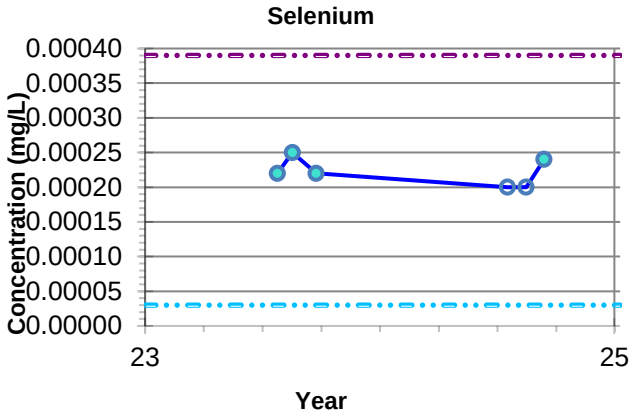
Figure F-40

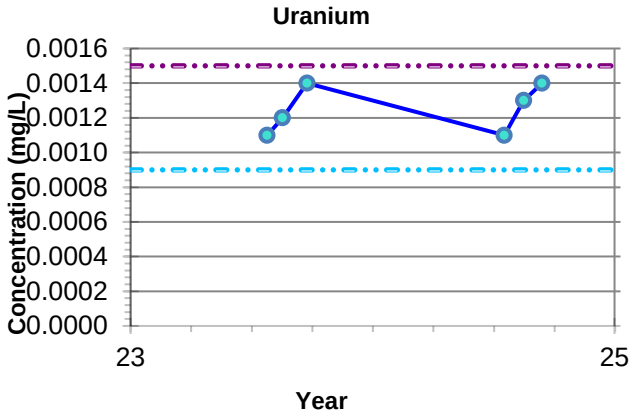
File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

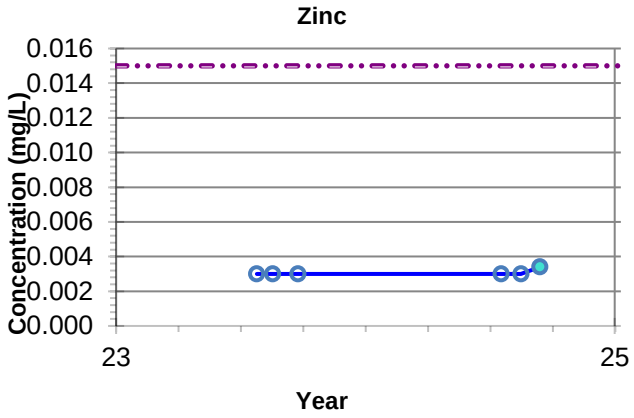












NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-04 (Upr Bosworth Crk)

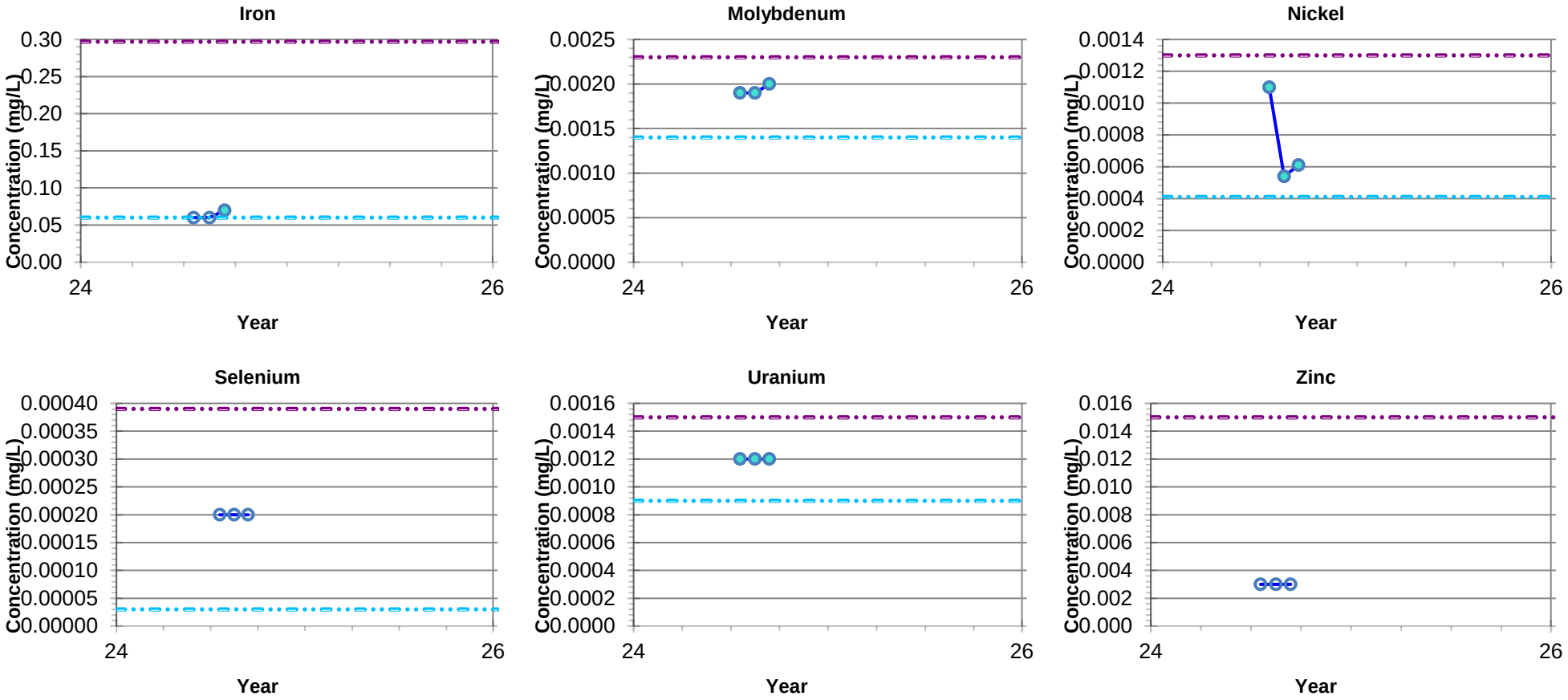
09-Apr-2025 date	NA edited by	JC drawn by	NA app by

PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

PROJECT NUMBER: 417085-54419-24200

Figure F-41

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-



NOTES: - Filled symbols denote Sample Values
- Unfilled symbols denote Values < Detection Limit(s)

Upper Control Limit

Lower Control Limit

Imperial Norman Wells
2024 Groundwater Monitoring & Remediation Program

Hydrochemical Control Charts
Monitoring Well: AEMP-US-05 (Bosworth Creek)

09-Apr-2025 date	NA edited by	JC drawn by	NA app by

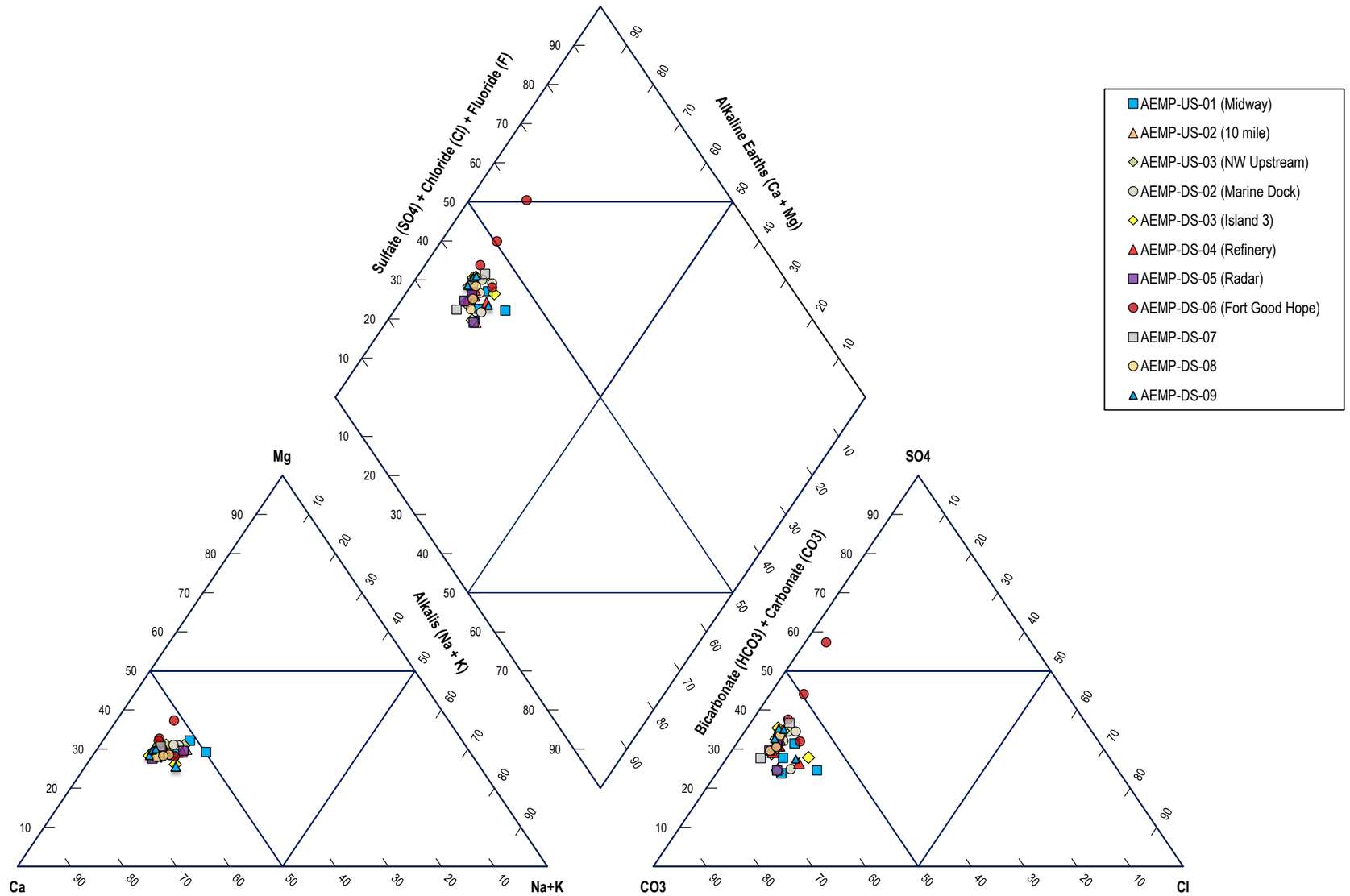
PREPARED SOLELY FOR THE USE OF OUR CLIENT AS SPECIFIED IN THE ACCOMPANYING REPORT. NO REPRESENTATION OF ANY KIND IS MADE TO OTHER PARTIES WITH WHICH WORLEYPARSONS HAS NOT ENTERED INTO A CONTRACT.

PROJECT NUMBER: 417085-54419-24200

Figure F-42

File Path: https://worleyparsons-my.sharepoint.com/personal/jinrong_cui_worley_com/Documents/Desktop/Graphs-2022/417085-

Appendix G. Piper Plots



IMPERIAL
AEMP
NORMAN WELLS, NT

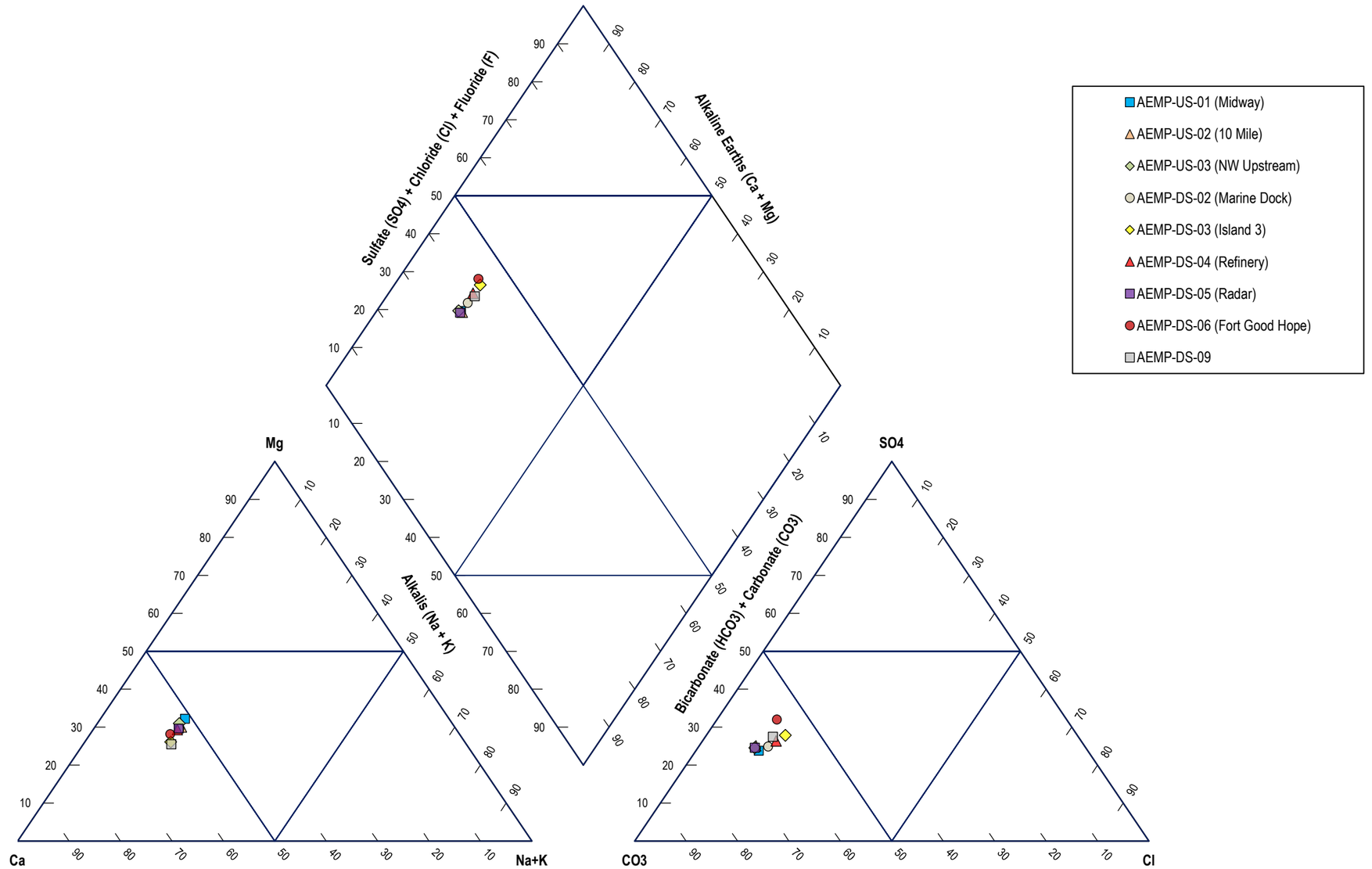
MACKENZIE RIVER - ALL 2024

Date:	Drawn by:	Edited by:	App'd by:
13-03-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-1

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

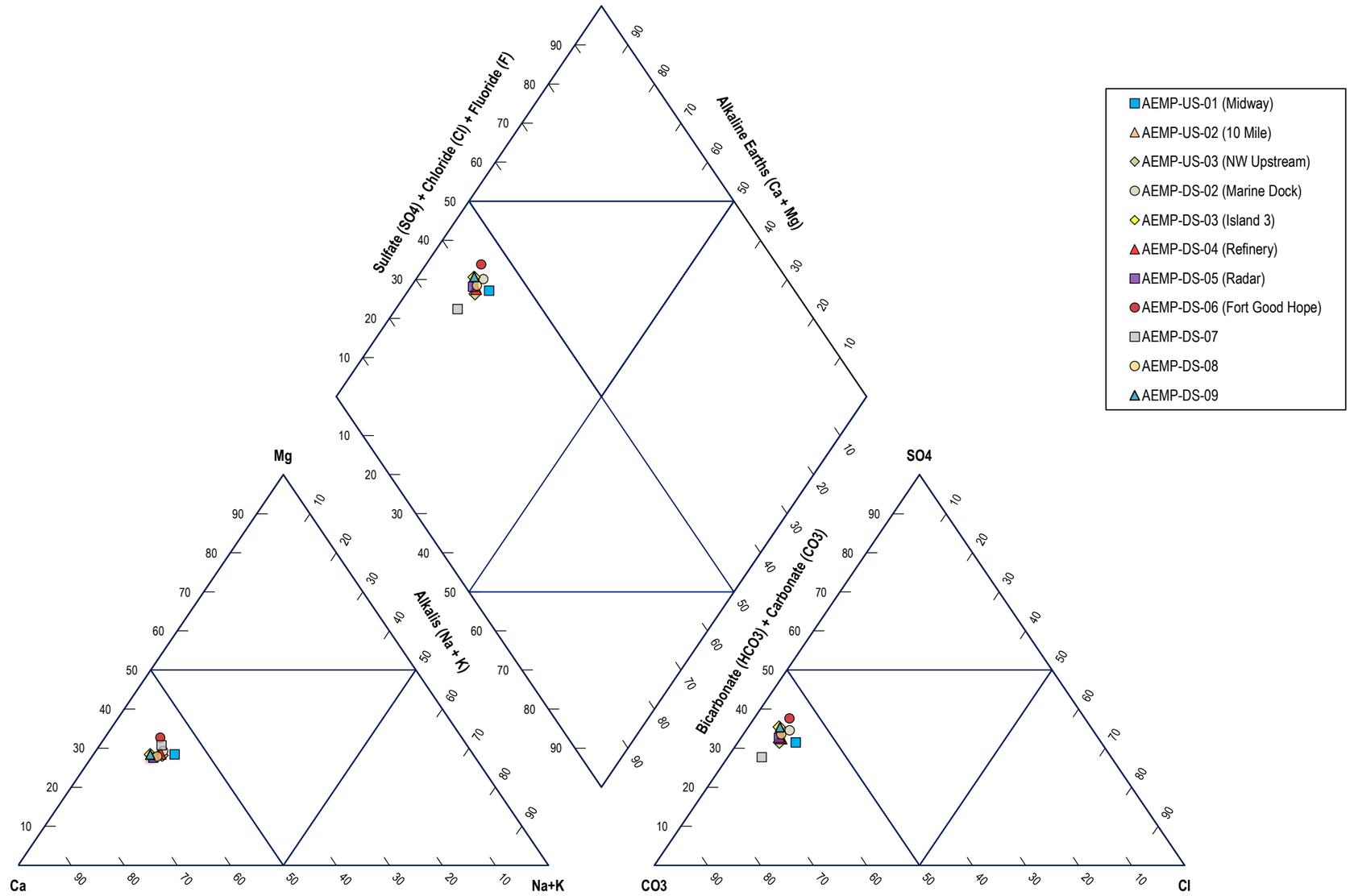
MACKENZIE RIVER - MARCH 2024

Date:	Drawn by:	Edited by:	App'd by:
12-03-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-2

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

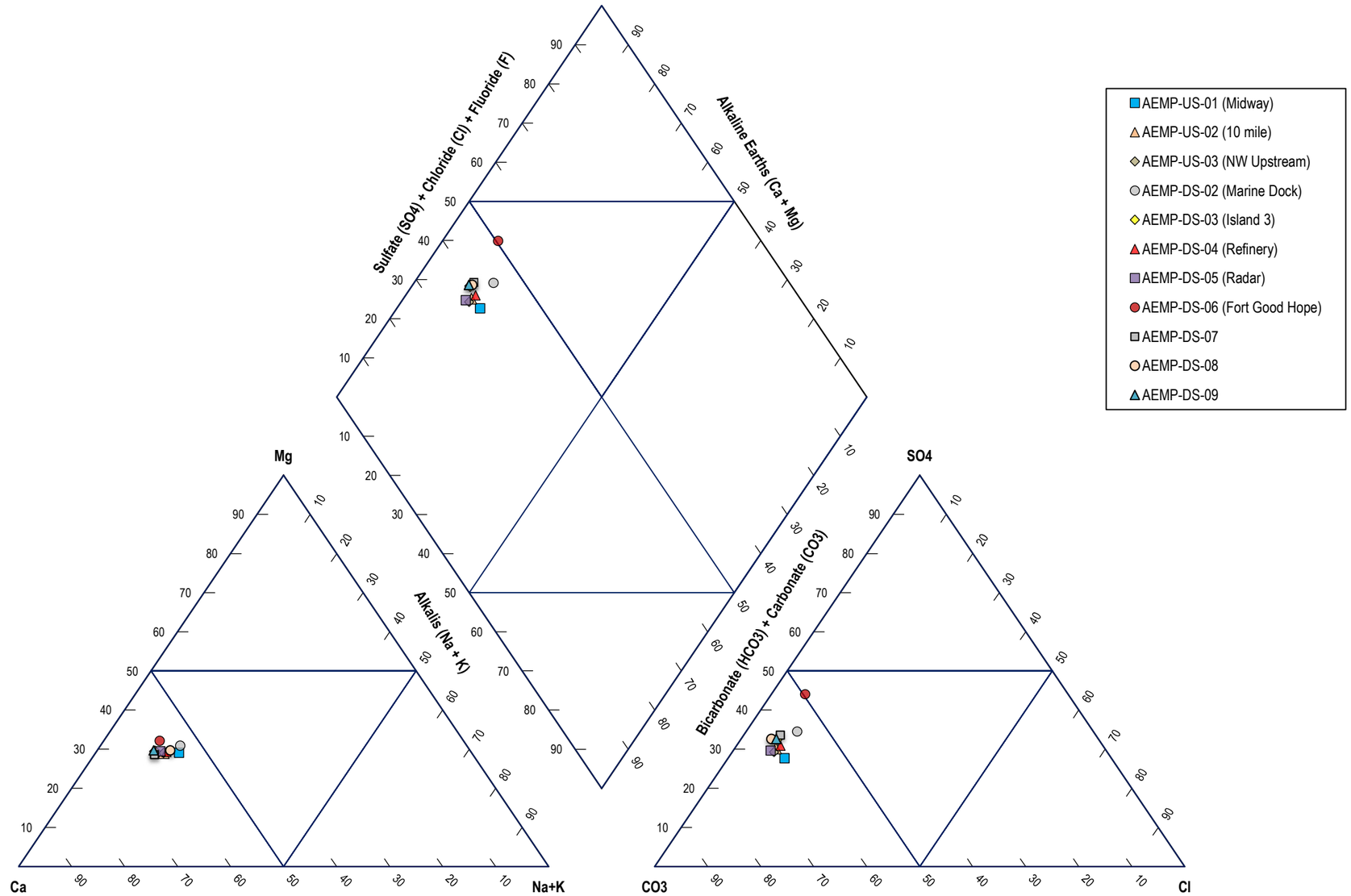
MACKENZIE RIVER - JULY 2024

Date:	Drawn by:	Edited by:	App'd by:
13-03-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-3

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

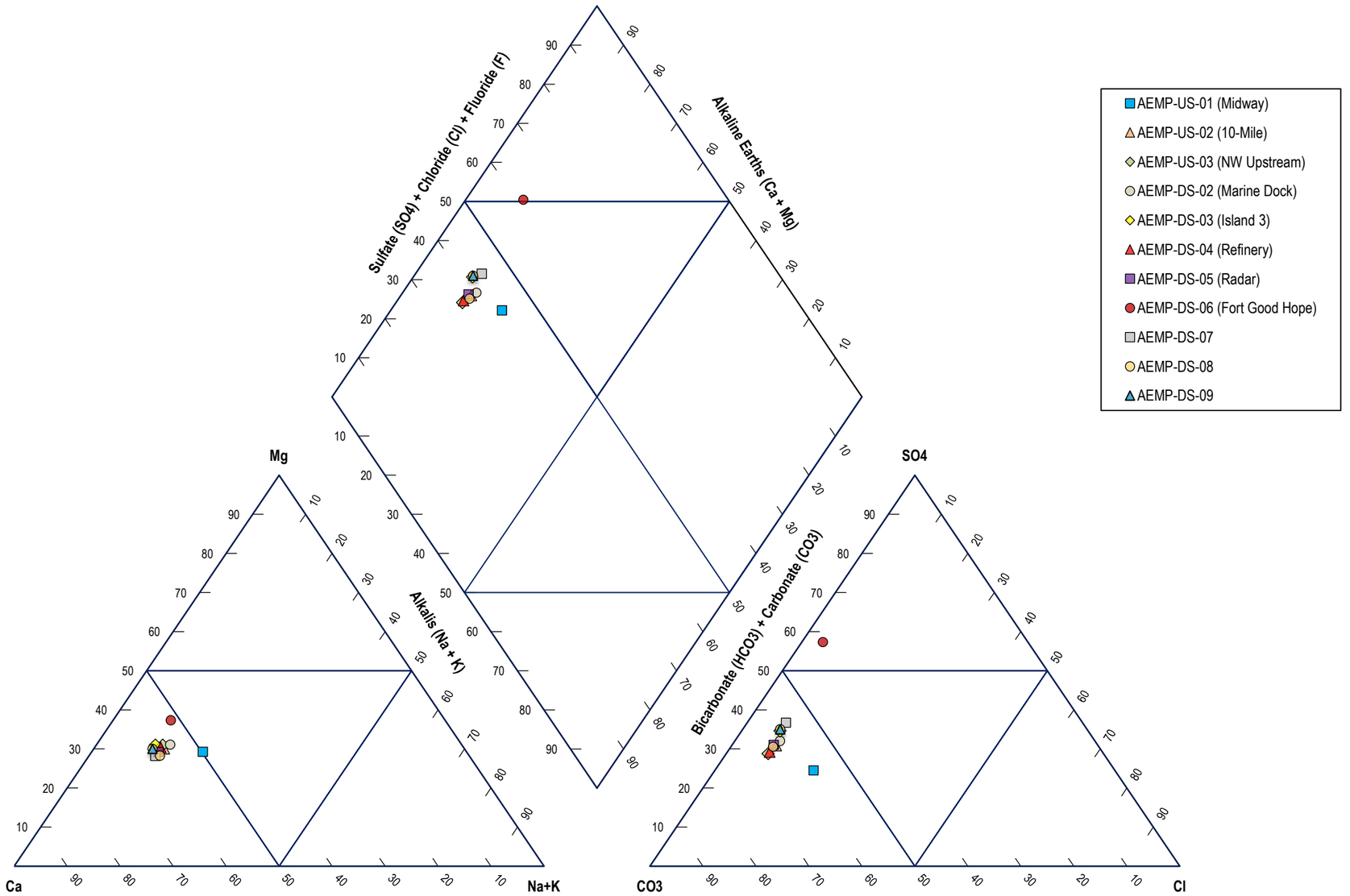
MACKENZIE RIVER - AUGUST 2024

Date:	Drawn by:	Edited by:	App'd by:
13-03-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-4

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

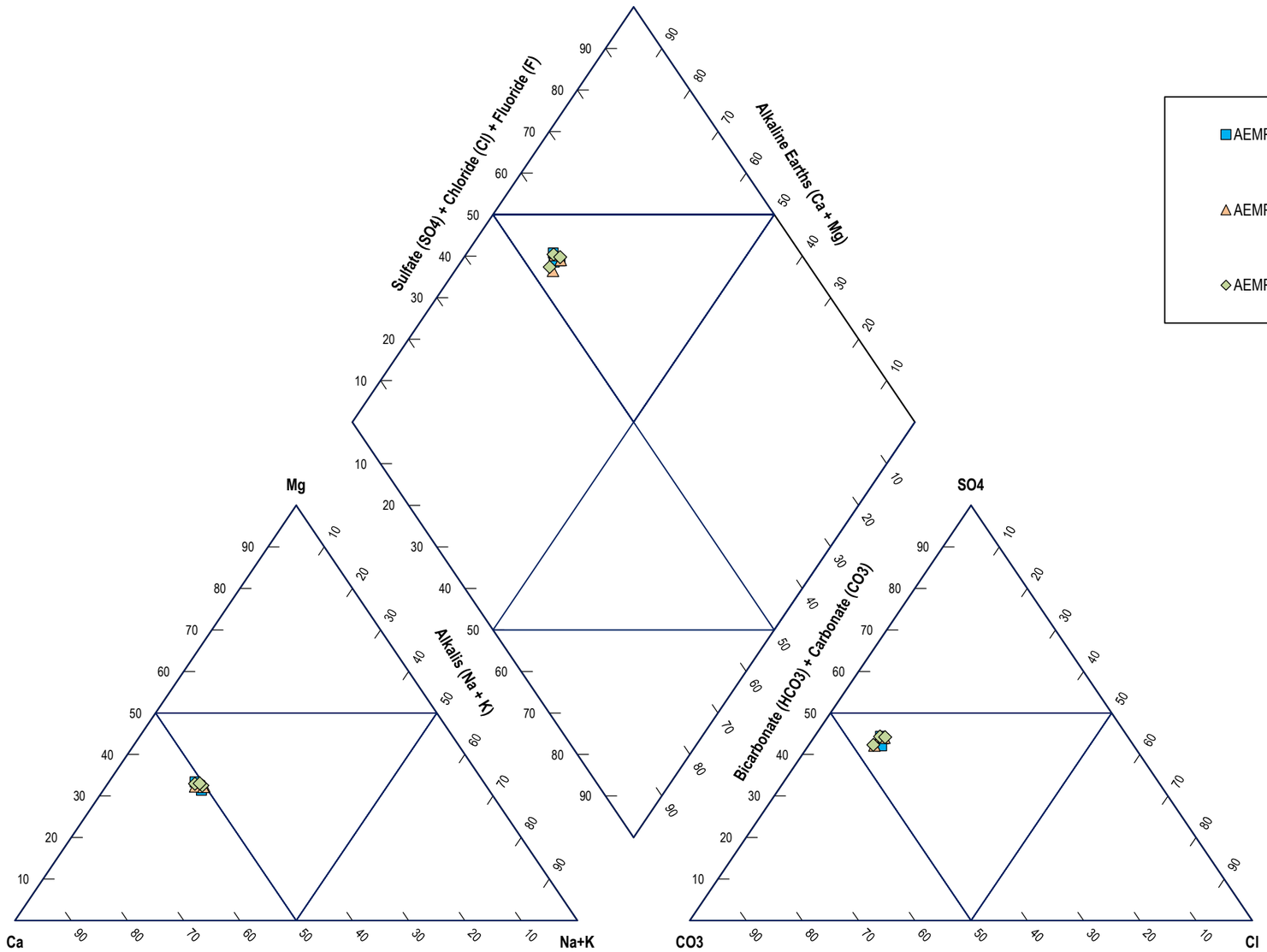
MACKENZIE RIVER - SEPTEMBER 2024

Date:	Drawn by:	Edited by:	App'd by:
13-03-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-5

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

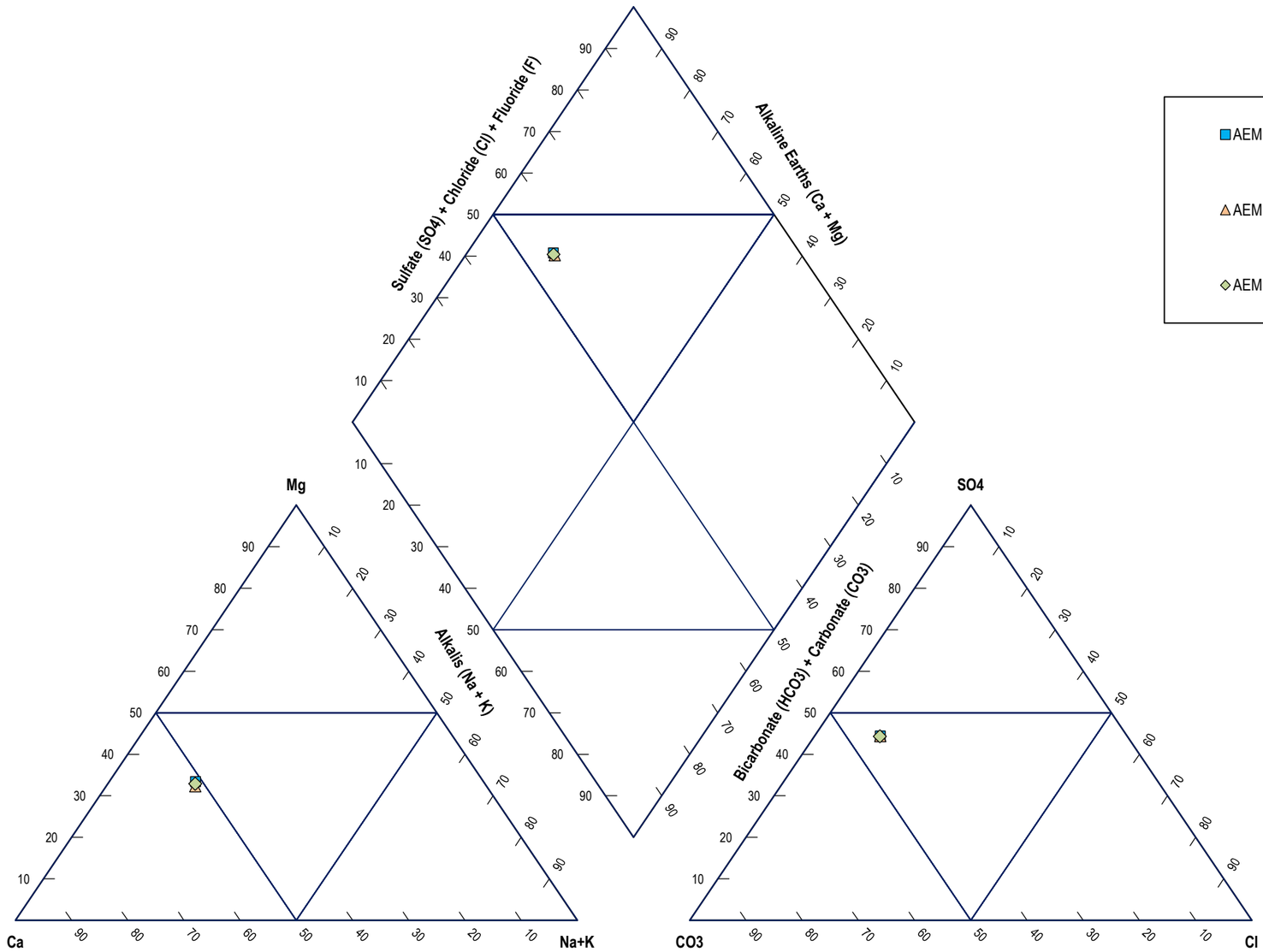
BOSWORTH CREEK - ALL 2024

Date:	Drawn by:	Edited by:	App'd by:
12-03-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-6

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

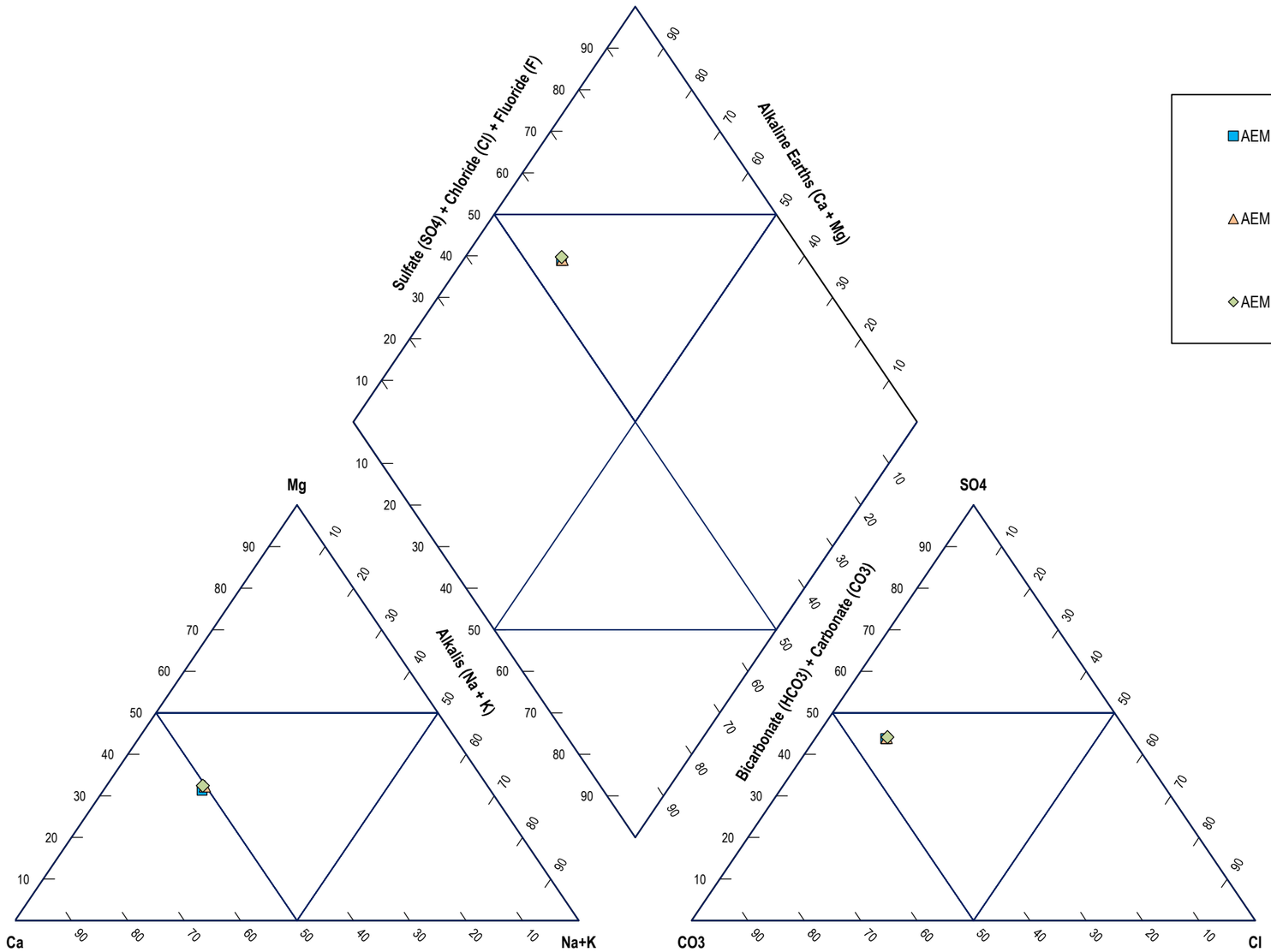
BOSWORTH CREEK - JULY 2024

Date:	Drawn by:	Edited by:	App'd by:
12-03-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-7

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

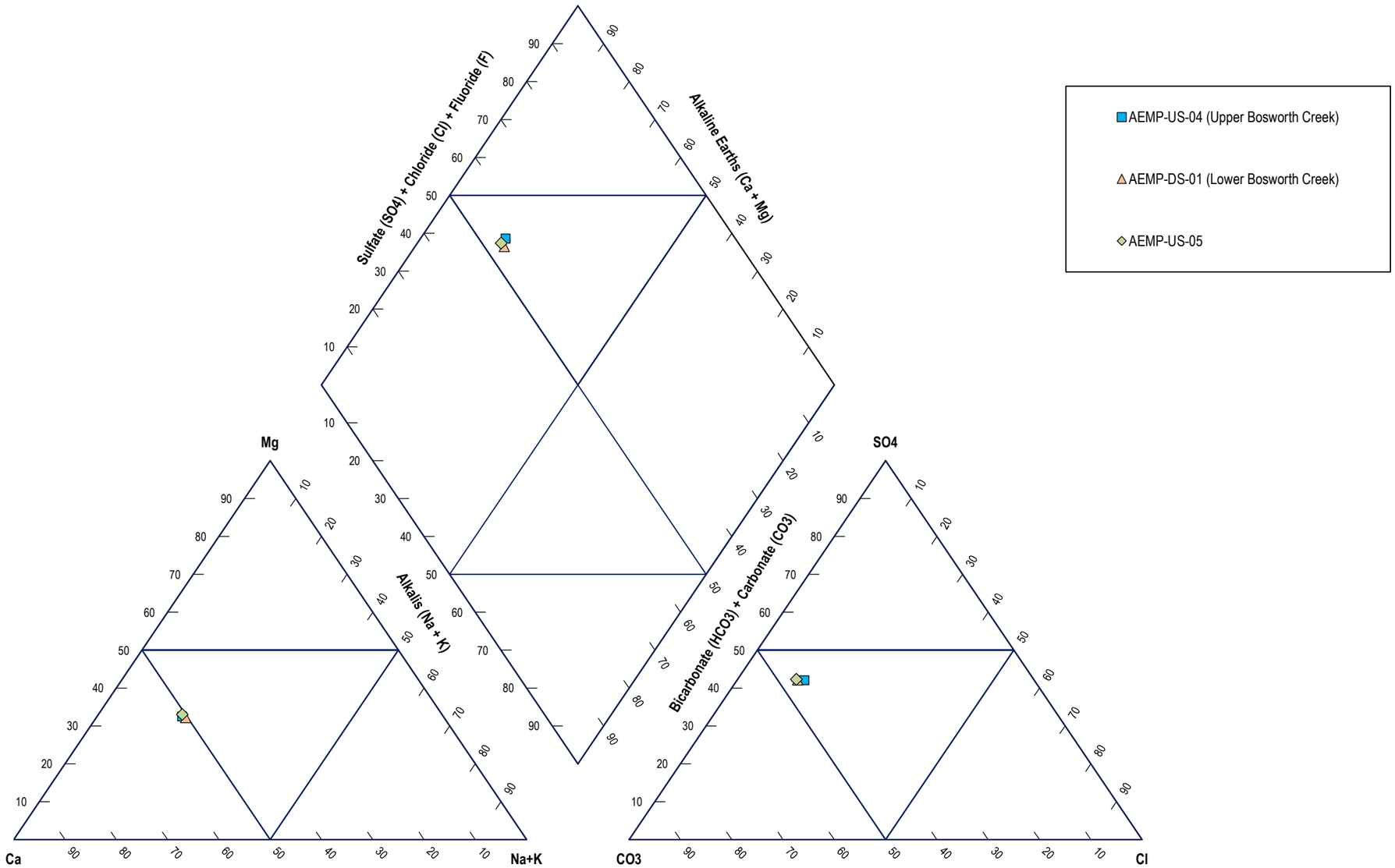
BOSWORTH CREEK - AUGUST 2024

Date:	Drawn by:	Edited by:	App'd by:
12-04-2025	BS	GY	AH

Advisian Project No.
417085-54419

FIG No. G-8

REV A



IMPERIAL
AEMP
NORMAN WELLS, NT

BOSWORTH CREEK -SEPTEMBER 2024

Date:	Drawn by:	Edited by:	App'd by:
12-03-2025	BS	GY	AH

Advisian Project No.: 417085-54419

FIG No.: G-9

REV: A

Appendix H. Surface Water Laboratory Certificates of Analysis

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200
Your C.O.C. #: 1 of 1

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/04
Report #: R3483406
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419662
Received: 2024/03/20, 13:23

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons (F2-F4 in water) (1, 3)	2	AB SOP-00037	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease (Gravimetric, n-Hexane) (1)	2	AB SOP-00092	SM 23 5520B/5520F m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200
Your C.O.C. #: 1 of 1

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/04
Report #: R3483406
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419662
Received: 2024/03/20, 13:23

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200
Your C.O.C. #: 1 of 1

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/04
Report #: R3483406
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419662

Received: 2024/03/20, 13:23

(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
04 Apr 2024 15:12:29

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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

Bureau Veritas Job #: C419662
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

AT1 BTEX AND F1-F4 IN WATER (WATER)

Bureau Veritas ID		CLA967	CLA968		
Sampling Date		2024/03/17 14:45	2024/03/17 13:47		
COC Number		1 of 1	1 of 1		
	UNITS	**AEMP-DS-09**	**AEMP-DS-05**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B318568
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B318568
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	0.20	B318568
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B319569
Toluene	mg/L	<0.00040	<0.00040	0.00040	B319569
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B319569
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B319569
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B319569
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B318710
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B318710
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B319569
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	105	105		B318568
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	107	107		B319569
4-Bromofluorobenzene (sur.)	%	103	97		B319569
D4-1,2-Dichloroethane (sur.)	%	95	96		B319569
RDL = Reportable Detection Limit					

Bureau Veritas Job #: C419662
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CLA967	CLA968		
Sampling Date		2024/03/17 14:45	2024/03/17 13:47		
COC Number		1 of 1	1 of 1		
	UNITS	**AEMP-DS-09**	**AEMP-DS-05**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.17	0.091	0.020	B320627
Nutrients					
Total Nitrogen (N)	mg/L	0.35	0.34	0.020	B320484
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CLA967	CLA968		
Sampling Date		2024/03/17 14:45	2024/03/17 13:47		
COC Number		1 of 1	1 of 1		
	UNITS	**AEMP-DS-09**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	0.000027	<0.000020	0.000020	B318548
Total Aluminum (Al)	mg/L	0.069	0.024	0.0030	B321936
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B321936
Total Arsenic (As)	mg/L	0.00046	0.00037	0.00020	B321936
Total Barium (Ba)	mg/L	0.065	0.041	0.010	B321941
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B321936
Total Boron (B)	mg/L	<0.020	<0.020	0.020	B321941
Total Calcium (Ca)	mg/L	45	29	0.30	B321941
Total Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B321936
Total Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B321936
Total Copper (Cu)	mg/L	0.0026	0.0011	0.0010	B321936
Total Iron (Fe)	mg/L	0.089	<0.060	0.060	B321941
Total Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B321936
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B321941
Total Magnesium (Mg)	mg/L	12	9.8	0.20	B321941
Total Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B321941
Total Molybdenum (Mo)	mg/L	0.0025	0.0011	0.00020	B321936
Total Nickel (Ni)	mg/L	0.0025	0.00092	0.00050	B321936
Total Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B321941
Total Potassium (K)	mg/L	1.3	1.0	0.30	B321941
Total Selenium (Se)	mg/L	0.00051	0.00027	0.00020	B321936
Total Silicon (Si)	mg/L	2.7	1.9	0.50	B321941
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B321936
Total Sodium (Na)	mg/L	15	9.7	0.50	B321941
Total Strontium (Sr)	mg/L	0.34	0.24	0.020	B321941
Total Sulphur (S)	mg/L	17	11	0.20	B321941
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B321936
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B321936
Total Titanium (Ti)	mg/L	0.0027	<0.0010	0.0010	B321936
Total Uranium (U)	mg/L	0.0014	0.00084	0.00010	B321936
Total Vanadium (V)	mg/L	0.0011	<0.0010	0.0010	B321936
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CLA967	CLA968		
Sampling Date		2024/03/17 14:45	2024/03/17 13:47		
COC Number		1 of 1	1 of 1		
	UNITS	**AEMP-DS-09**	**AEMP-DS-05**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	0.0048	<0.0030	0.0030	B321936
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C419662
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLA967			CLA967			CLA968		
Sampling Date		2024/03/17 14:45			2024/03/17 14:45			2024/03/17 13:47		
COC Number		1 of 1			1 of 1			1 of 1		
	UNITS	**AEMP-DS-09**	**RDL**	**QC Batch**	**AEMP-DS-09 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	190	0.50	B318354				140	0.50	B318354
Ion Balance (% Difference)	%	6.9	N/A	B318421				9.7	N/A	B318421
Nitrate (N)	mg/L	0.18	0.010	B318119				0.25	0.010	B318119
Nitrate (NO3)	mg/L	0.81	0.044	B320624				1.1	0.044	B320624
Nitrite (NO2)	mg/L	<0.033	0.033	B320624				<0.033	0.033	B320624
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B318420				<0.0020	0.0020	B318420
Demand Parameters										
Chemical Oxygen Demand	mg/L	32	10	B319241				<10 (1)	10	B319241
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B318352				<0.000020	0.000020	B318352
Misc. Inorganics										
Conductivity	uS/cm	390	2.0	B320707				270	2.0	B320707
Dissolved Organic Carbon (C)	mg/L	6.2	0.50	B323356				3.0	0.50	B322076
pH	pH	7.97	N/A	B320706				7.93	N/A	B320706
Total Organic Carbon (C)	mg/L	4.5	0.50	B323357				2.9	0.50	B322450
Total Dissolved Solids	mg/L	240	10	B318830				170	10	B318830
Total Suspended Solids	mg/L	2.8	1.0	B318809	<1.0	1.0	B318809	<1.0	1.0	B318809
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B320704				<1.0	1.0	B320704
Alkalinity (Total as CaCO3)	mg/L	120	1.0	B320704				86	1.0	B320704
Bicarbonate (HCO3)	mg/L	140	1.0	B320704				110	1.0	B320704
Carbonate (CO3)	mg/L	<1.0	1.0	B320704				<1.0	1.0	B320704
Hydroxide (OH)	mg/L	<1.0	1.0	B320704				<1.0	1.0	B320704
Total Sulphide	mg/L	<0.0018	0.0018	B319618				<0.0018	0.0018	B319618
Chloride (Cl)	mg/L	18	1.0	B320585				11	1.0	B320585
Sulphate (SO4)	mg/L	51	1.0	B320585				33	1.0	B320585

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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Bureau Veritas Job #: C419662
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLA967			CLA967			CLA968		
Sampling Date		2024/03/17 14:45			2024/03/17 14:45			2024/03/17 13:47		
COC Number		1 of 1			1 of 1			1 of 1		
	UNITS	**AEMP-DS-09**	**RDL**	**QC Batch**	**AEMP-DS-09 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B320599				<0.015	0.015	B320599
Orthophosphate (P)	mg/L	<0.0030	0.0030	B320498				<0.0030	0.0030	B320498
Nitrite (N)	mg/L	<0.010	0.010	B320671				<0.010	0.010	B320671
Nitrate plus Nitrite (N)	mg/L	0.18	0.010	B320671				0.25	0.010	B320671
Misc. Organics										
Total Oil and grease	mg/L	3.0	2.0	B316377				5.0	2.0	B316377
Physical Properties										
True Colour	PtCo units	8.2	2.0	B320461				3.0	2.0	B320461
Physical Properties										
Turbidity	NTU	2.5	0.10	B318837				0.10	0.10	B318837

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CLA968		
Sampling Date		2024/03/17 13:47		
COC Number		1 of 1		
	UNITS	**AEMP-DS-05 Lab-Dup**	**RDL**	**QC Batch**
Misc. Organics				
Total Oil and grease	mg/L	6.0	2.0	B316377

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLA967	CLA968		
Sampling Date		2024/03/17 14:45	2024/03/17 13:47		
COC Number		1 of 1	1 of 1		
	UNITS	**AEMP-DS-09**	**AEMP-DS-05**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B318654
Acenaphthene	ug/L	<0.10	<0.10	0.10	B317386
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B317386
Acridine	ug/L	<0.040	<0.040	0.040	B317386
Anthracene	ug/L	<0.010	<0.010	0.010	B317386
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B317386
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B317386
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B317386
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B317386
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B317386
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B317386
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B317386
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B317386
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B317386
Fluoranthene	ug/L	<0.010	<0.010	0.010	B317386
Fluorene	ug/L	<0.050	<0.050	0.050	B317386
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B317386
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B317386
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B317386
Naphthalene	ug/L	<0.10	<0.10	0.10	B317386
Phenanthrene	ug/L	<0.050	<0.050	0.050	B317386
Perylene	ug/L	<0.050	<0.050	0.050	B317386
Pyrene	ug/L	<0.020	<0.020	0.020	B317386
Quinoline	ug/L	<0.20	<0.20	0.20	B317386
Retene	ug/L	<0.050	<0.050	0.050	B317386
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B317386
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B317386
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B317386
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B317386
Biphenyl	ug/L	<0.020	<0.020	0.020	B317386
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B317386
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLA967	CLA968		
Sampling Date		2024/03/17 14:45	2024/03/17 13:47		
COC Number		1 of 1	1 of 1		
	UNITS	**AEMP-DS-09**	**AEMP-DS-05**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B317386
C1-fluorene	ug/L	<0.050	<0.050	0.050	B317386
C2-fluorene	ug/L	<0.050	<0.050	0.050	B317386
C3-fluorene	ug/L	<0.050	<0.050	0.050	B317386
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B317386
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B317386
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B317386
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B317386
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B317386
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B317386
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B317386
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B317386
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B317386
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B317386
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B317386
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B317386
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B317386
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B317386
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B317386
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B317386
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B317386
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B317386
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B317386
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B317386
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B317386
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	101	97		B317386
D8-ACENAPHTHYLENE (sur.)	%	91	88		B317386
D8-NAPHTHALENE (sur.)	%	88	84		B317386
TERPHENYL-D14 (sur.)	%	113	107		B317386
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CLA967		CLA968		
Sampling Date		2024/03/17 14:45		2024/03/17 13:47		
COC Number		1 of 1		1 of 1		
	UNITS	**AEMP-DS-09**	**RDL**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements						
Dissolved Mercury (Hg)	ug/L	<0.015 (1)	0.015	<0.024 (1)	0.024	B323936
Total Mercury (Hg)	ug/L	<0.0019	0.0019	<0.0019	0.0019	B323778

RDL = Reportable Detection Limit
(1) Mercury RDL raised due to background interference.

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CLA967		CLA968		
Sampling Date		2024/03/17 14:45		2024/03/17 13:47		
COC Number		1 of 1		1 of 1		
	UNITS	**AEMP-DS-09**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements						
Dissolved Aluminum (Al)	mg/L	0.0071	B322915	<0.0030	0.0030	B322918
Dissolved Antimony (Sb)	mg/L	<0.00060	B322915	<0.00060	0.00060	B322918
Dissolved Arsenic (As)	mg/L	0.00035	B322915	0.00034	0.00020	B322918
Dissolved Barium (Ba)	mg/L	0.066	B322208	0.046	0.010	B322208
Dissolved Beryllium (Be)	mg/L	<0.0010	B322915	<0.0010	0.0010	B322918
Dissolved Boron (B)	mg/L	<0.020	B322208	<0.020	0.020	B322208
Dissolved Calcium (Ca)	mg/L	52	B322208	36	0.30	B322208
Dissolved Chromium (Cr)	mg/L	<0.0010	B322915	<0.0010	0.0010	B322918
Dissolved Cobalt (Co)	mg/L	<0.00030	B322915	<0.00030	0.00030	B322918
Dissolved Copper (Cu)	mg/L	0.0015	B322915	0.0012	0.0010	B322918
Dissolved Iron (Fe)	mg/L	<0.060	B322208	<0.060	0.060	B322208
Dissolved Lead (Pb)	mg/L	<0.00020	B322915	<0.00020	0.00020	B322918
Dissolved Lithium (Li)	mg/L	<0.020	B322208	<0.020	0.020	B322208
Dissolved Magnesium (Mg)	mg/L	14	B322208	12	0.20	B322208
Dissolved Manganese (Mn)	mg/L	<0.0040	B322208	<0.0040	0.0040	B322208
Dissolved Molybdenum (Mo)	mg/L	0.0012	B322915	0.00066	0.00020	B322918
Dissolved Nickel (Ni)	mg/L	0.0012	B322915	0.00086	0.00050	B322918
Dissolved Phosphorus (P)	mg/L	<0.10	B322208	<0.10	0.10	B322208
Dissolved Potassium (K)	mg/L	1.4	B322208	1.1	0.30	B322208
Dissolved Selenium (Se)	mg/L	0.00039	B322915	0.00025	0.00020	B322918
Dissolved Silicon (Si)	mg/L	2.5	B322208	2.0	0.50	B322208
Dissolved Silver (Ag)	mg/L	<0.00010	B322915	<0.00010	0.00010	B322918
Dissolved Sodium (Na)	mg/L	17	B322208	12	0.50	B322208
Dissolved Strontium (Sr)	mg/L	0.36	B322208	0.27	0.020	B322208
Dissolved Sulphur (S)	mg/L	19	B322208	13	0.20	B322208
Dissolved Thallium (Tl)	mg/L	<0.00020	B322915	<0.00020	0.00020	B322918
Dissolved Tin (Sn)	mg/L	<0.0010	B322915	<0.0010	0.0010	B322918
Dissolved Titanium (Ti)	mg/L	<0.0010	B322915	<0.0010	0.0010	B322918
Dissolved Uranium (U)	mg/L	0.00093	B322915	0.00053	0.00010	B322918
Dissolved Vanadium (V)	mg/L	<0.0010	B322915	<0.0010	0.0010	B322918
Dissolved Zinc (Zn)	mg/L	0.0036	B322915	0.0035	0.0030	B322918
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C419662
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

TEST SUMMARY

Bureau Veritas ID: CLA967
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/03/17
Relinquished: 2024/03/18
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B320704	N/A	2024/03/22	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B319569	N/A	2024/03/22	Wonjeong Park
F1-BTEX	CALC/MS	B318710	N/A	2024/03/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B318352	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B318548	N/A	2024/03/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B320585	N/A	2024/03/22	Shanna McKort
COD by Colorimeter	M/PROB	B319241	N/A	2024/03/21	Amy Phan
True Colour	SPEC/COL	B320461	N/A	2024/03/22	Tyler Orr
Carbon (DOC)	TECH	B323356	N/A	2024/03/27	Ye Hyun KIM
Conductivity @25C	COND	B320707	N/A	2024/03/22	Ayesha Shakoor
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B318568	2024/03/22	2024/03/22	Chuhan Huang
Sulphide (as H2S)	CALC	B318420	N/A	2024/03/22	Automated Statchk
Hardness	CALC	B318354	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B323936	2024/03/21	2024/03/27	Kiran Kumari
Mercury (Total) by CV	CV	B323778	2024/03/21	2024/03/27	Kiran Kumari
Elements by ICP - Dissolved	ICPA	B322208	N/A	2024/03/25	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B321941	2024/03/25	2024/03/26	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B322915	N/A	2024/03/26	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B321936	2024/03/25	2024/03/25	Kristijan Kovac
Ion Balance	CALC	B318421	N/A	2024/03/26	Automated Statchk
Ammonia-N (Total)	KONE	B320599	N/A	2024/03/22	Isabelle White
Nitrate and Nitrite	CALC	B320624	N/A	2024/03/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B320671	N/A	2024/03/22	Isabelle White
Nitrate (as N)	CALC	B318119	2024/03/23	2024/03/23	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B316377	2024/03/22	2024/03/22	Junyan Ban
Target & Alkylated PAH in Water by GC/MS	GC/MS	B317386	2024/03/22	2024/03/26	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B318654	N/A	2024/03/27	Automated Statchk
pH @25°C	AT/ALK	B320706	N/A	2024/03/22	Ayesha Shakoor
Orthophosphate by Automated Analyzer	KONE	B320498	N/A	2024/03/22	Mary Anne Dela Cruz
Total Sulphide	SPEC	B319618	N/A	2024/03/22	Bailey Morrison
Total Dissolved Solids (Filt. Residue)	BAL	B318830	2024/03/21	2024/03/22	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B320627	N/A	2024/03/23	Automated Statchk
Nitrogen (Total)	AC/COL	B320484	2024/03/22	2024/03/22	Carlo Truong
Carbon (Total Organic)	TECH	B323357	N/A	2024/03/27	Ye Hyun KIM
Total Suspended Solids (NFR)	BAL	B318809	2024/03/21	2024/03/23	Haydee Estilong
Turbidity	TURB	B318837	N/A	2024/03/21	Daryl Viktoria Noval

Bureau Veritas ID: CLA967 Dup
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/03/17
Relinquished: 2024/03/18
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Suspended Solids (NFR)	BAL	B318809	2024/03/21	2024/03/23	Haydee Estilong

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Bureau Veritas Job #: C419662
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

TEST SUMMARY

Bureau Veritas ID: CLA968
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/03/17
Relinquished: 2024/03/18
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B320704	N/A	2024/03/22	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B319569	N/A	2024/03/22	Wonjeong Park
F1-BTEX	CALC/MS	B318710	N/A	2024/03/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B318352	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B318548	N/A	2024/03/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B320585	N/A	2024/03/22	Shanna McKort
COD by Colorimeter	M/PROB	B319241	N/A	2024/03/21	Amy Phan
True Colour	SPEC/COL	B320461	N/A	2024/03/22	Tyler Orr
Carbon (DOC)	TECH	B322076	N/A	2024/03/25	Ming Dong
Conductivity @25C	COND	B320707	N/A	2024/03/22	Ayesha Shakoor
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B318568	2024/03/22	2024/03/22	Chuhan Huang
Sulphide (as H2S)	CALC	B318420	N/A	2024/03/22	Automated Statchk
Hardness	CALC	B318354	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B323936	2024/03/21	2024/03/27	Kiran Kumari
Mercury (Total) by CV	CV	B323778	2024/03/21	2024/03/27	Kiran Kumari
Elements by ICP - Dissolved	ICPA	B322208	N/A	2024/03/25	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B321941	2024/03/25	2024/03/26	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B322918	N/A	2024/03/26	Kevin Huang
Elements by ICPMS - Total	ICPM	B321936	2024/03/25	2024/03/25	Kristijan Kovac
Ion Balance	CALC	B318421	N/A	2024/03/26	Automated Statchk
Ammonia-N (Total)	KONE	B320599	N/A	2024/03/22	Isabelle White
Nitrate and Nitrite	CALC	B320624	N/A	2024/03/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B320671	N/A	2024/03/22	Isabelle White
Nitrate (as N)	CALC	B318119	2024/03/23	2024/03/23	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B316377	2024/03/22	2024/03/22	Junyan Ban
Target & Alkylated PAH in Water by GC/MS	GC/MS	B317386	2024/03/22	2024/03/26	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B318654	N/A	2024/03/27	Automated Statchk
pH @25°C	AT/ALK	B320706	N/A	2024/03/22	Ayesha Shakoor
Orthophosphate by Automated Analyzer	KONE	B320498	N/A	2024/03/22	Mary Anne Dela Cruz
Total Sulphide	SPEC	B319618	N/A	2024/03/22	Bailey Morrison
Total Dissolved Solids (Filt. Residue)	BAL	B318830	2024/03/21	2024/03/22	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B320627	N/A	2024/03/23	Automated Statchk
Nitrogen (Total)	AC/COL	B320484	2024/03/22	2024/03/22	Carlo Truong
Carbon (Total Organic)	TECH	B322450	N/A	2024/03/26	Ming Dong
Total Suspended Solids (NFR)	BAL	B318809	2024/03/21	2024/03/23	Haydee Estilong
Turbidity	TURB	B318837	N/A	2024/03/21	Daryl Viktoria Noval

Bureau Veritas ID: CLA968 Dup
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/03/17
Relinquished: 2024/03/18
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Oil and Grease (Gravimetric, n-Hexane)	CALC	B316377	2024/03/22	2024/03/22	Junyan Ban

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GENERAL COMMENTS

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

Package 1	3.7°C

Temperatures upon receipt at Bureau Veritas Labs Calgary
Package 1: 2.0 degrees C
Each temperature is the average of up to three cooler temperatures taken at receipt.

Sample CLA967 [AEMP-DS-09] : Sample was analyzed past method specified hold time for Turbidity. 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 True Colour. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CLA968 [AEMP-DS-05] : Sample was analyzed past method specified hold time for Turbidity. 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 True Colour. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CLA967	AEMP-DS-09	Water	COLOURT-W	PHYS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLA967	AEMP-DS-09	Water	NO23AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLA967	AEMP-DS-09	Water	PO4AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLA967	AEMP-DS-09	Water	TURB	SPP	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLA968	AEMP-DS-05	Water	COLOURT-W	PHYS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLA968	AEMP-DS-05	Water	NO23AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLA968	AEMP-DS-05	Water	PO4AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.

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DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CLA968	AEMP-DS-05	Water	TURB	SPP	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B316377	JB9	Method Blank	Total Oil and grease	2024/03/22	<2.0		mg/L	
B317386	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/03/25		91	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/25		103	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/25		79	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/25		76	%	50 - 130
			Acenaphthene	2024/03/25	<0.10		ug/L	
			Acenaphthylene	2024/03/25	<0.10		ug/L	
			Acridine	2024/03/25	<0.040		ug/L	
			Anthracene	2024/03/25	<0.010		ug/L	
			Benzo(a)anthracene	2024/03/25	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/03/25	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/03/25	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/03/25	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/03/25	<0.050		ug/L	
			Benzo(a)pyrene	2024/03/25	<0.0075		ug/L	
			Benzo(e)pyrene	2024/03/25	<0.050		ug/L	
			Chrysene	2024/03/25	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/03/25	<0.0075		ug/L	
			Fluoranthene	2024/03/25	<0.010		ug/L	
			Fluorene	2024/03/25	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/03/25	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/03/25	<0.0085		ug/L	
			2-Methylnaphthalene	2024/03/25	<0.10		ug/L	
			Naphthalene	2024/03/25	<0.10		ug/L	
			Phenanthrene	2024/03/25	<0.050		ug/L	
			Perylene	2024/03/25	<0.050		ug/L	
			Pyrene	2024/03/25	<0.020		ug/L	
			Quinoline	2024/03/25	<0.20		ug/L	
			Retene	2024/03/25	<0.050		ug/L	
			C1-Naphthalene	2024/03/25	<0.10		ug/L	
			C3-Naphthalene	2024/03/25	<0.10		ug/L	
			C4-Naphthalene	2024/03/25	<0.10		ug/L	
			C2-Naphthalene	2024/03/25	<0.10		ug/L	
			Biphenyl	2024/03/25	<0.020		ug/L	
			C1-biphenyl	2024/03/25	<0.020		ug/L	
			C2-biphenyl	2024/03/25	<0.020		ug/L	
			C1-fluorene	2024/03/25	<0.050		ug/L	
			C2-fluorene	2024/03/25	<0.050		ug/L	
			C3-fluorene	2024/03/25	<0.050		ug/L	
			Dibenzothiophene	2024/03/25	<0.020		ug/L	
			C1-dibenzothiophene	2024/03/25	<0.020		ug/L	
			C2-dibenzothiophene	2024/03/25	<0.020		ug/L	
			C3-dibenzothiophene	2024/03/25	<0.020		ug/L	
			C4-dibenzothiophene	2024/03/25	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/03/25	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/03/25	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/03/25	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/03/25	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/03/25	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/03/25	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/03/25	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/03/25	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C1 benzo(a)anthracene/chrysene	2024/03/25	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/03/25	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/03/25	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/03/25	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/03/25	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/03/25	<0.0075		ug/L	
			C1-Acenaphthene	2024/03/25	<0.10		ug/L	
			1-Methylnaphthalene	2024/03/25	<0.10		ug/L	
B318568	CHA	Method Blank	O-TERPHENYL (sur.)	2024/03/22		106	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/22	<0.10		mg/L	
			F3 (C16-C34 Hydrocarbons)	2024/03/22	<0.10		mg/L	
			F4 (C34-C50 Hydrocarbons)	2024/03/22	<0.20		mg/L	
B318809	HE1	Method Blank	Total Suspended Solids	2024/03/23	<1.0		mg/L	
B318830	DVN	Method Blank	Total Dissolved Solids	2024/03/22	<10		mg/L	
B318837	DVN	Method Blank	Turbidity	2024/03/21	<0.10		NTU	
B319241	AP1	Method Blank	Chemical Oxygen Demand	2024/03/21	<10		mg/L	
B319569	WPK	Method Blank	1,4-Difluorobenzene (sur.)	2024/03/22		111	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/22		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/22		93	%	50 - 140
			Benzene	2024/03/22	<0.00040		mg/L	
			Toluene	2024/03/22	<0.00040		mg/L	
			Ethylbenzene	2024/03/22	<0.00040		mg/L	
			m & p-Xylene	2024/03/22	<0.00080		mg/L	
			o-Xylene	2024/03/22	<0.00040		mg/L	
			F1 (C6-C10)	2024/03/22	<0.10		mg/L	
B319618	BYM	Method Blank	Total Sulphide	2024/03/22	<0.0018		mg/L	
B320461	TOR	Method Blank	True Colour	2024/03/22	<2.0		PtCo units	
B320484	CTU	Method Blank	Total Nitrogen (N)	2024/03/22	<0.020		mg/L	
B320498	MAP	Method Blank	Orthophosphate (P)	2024/03/22	<0.0030		mg/L	
B320585	SKM	Method Blank	Chloride (Cl)	2024/03/22	<1.0		mg/L	
			Sulphate (SO4)	2024/03/22	<1.0		mg/L	
B320599	ISW	Method Blank	Total Ammonia (N)	2024/03/22	<0.015		mg/L	
B320671	ISW	Method Blank	Nitrite (N)	2024/03/22	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/03/22	<0.010		mg/L	
B320704	A5S	Method Blank	Alkalinity (Total as CaCO3)	2024/03/22	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/03/22	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/03/22	<1.0		mg/L	
			Carbonate (CO3)	2024/03/22	<1.0		mg/L	
			Hydroxide (OH)	2024/03/22	<1.0		mg/L	
B320707	A5S	Method Blank	Conductivity	2024/03/22	<2.0		uS/cm	
B321936	KKC	Method Blank	Total Aluminum (Al)	2024/03/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/03/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/03/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/03/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/03/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/03/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/03/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/03/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/03/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/03/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/03/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/03/25	<0.00020		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Tin (Sn)	2024/03/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/03/25	<0.0010		mg/L	
			Total Uranium (U)	2024/03/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/03/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/03/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/03/25	<0.0010		mg/L	
B321941	VSC	Method Blank	Total Iron (Fe)	2024/03/26	<0.060		mg/L	
			Total Lithium (Li)	2024/03/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/03/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/03/26	<0.0040		mg/L	
			Total Potassium (K)	2024/03/26	<0.30		mg/L	
			Total Sodium (Na)	2024/03/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/03/26	<0.020		mg/L	
			Total Sulphur (S)	2024/03/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/03/26	<0.10		mg/L	
			Total Barium (Ba)	2024/03/26	<0.010		mg/L	
			Total Silicon (Si)	2024/03/26	<0.50		mg/L	
			Total Boron (B)	2024/03/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/03/26	<0.30		mg/L	
B322076	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/03/25	<0.50		mg/L	
B322208	HQV	Method Blank	Dissolved Iron (Fe)	2024/03/25	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/03/25	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/03/25	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/03/25	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/03/25	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/03/25	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/03/25	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/03/25	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/03/25	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/03/25	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/03/25	<0.50		mg/L	
			Dissolved Boron (B)	2024/03/25	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/03/25	<0.30		mg/L	
B322450	MDO	Method Blank	Total Organic Carbon (C)	2024/03/26	<0.50		mg/L	
B322915	KKC	Method Blank	Dissolved Aluminum (Al)	2024/03/27	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/03/27	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/03/27	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/03/27	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/03/27	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/03/27	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/03/27	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/03/27	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/03/27	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/03/27	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/03/27	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/03/27	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/03/27	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/03/27	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/03/27	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/03/27	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/03/27	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/03/27	<0.0010		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B322918	KH2	Method Blank	Dissolved Aluminum (Al)	2024/03/26	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/03/26	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/03/26	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/03/26	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/03/26	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/03/26	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/03/26	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/03/26	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/03/26	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/03/26	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/03/26	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/03/26	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/03/26	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/03/26	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/03/26	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/03/26	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/03/26	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/03/26	<0.0010		mg/L	
B323356	YHK	Method Blank	Dissolved Organic Carbon (C)	2024/03/27	<0.50		mg/L	
B323357	YHK	Method Blank	Total Organic Carbon (C)	2024/03/27	<0.50		mg/L	
B323778	KKM	Method Blank	Total Mercury (Hg)	2024/03/27	<0.0019		ug/L	
B323936	KKM	Method Blank	Dissolved Mercury (Hg)	2024/03/27	<0.0019		ug/L	
B318809	HE1	RPD [CLA967-01]	Total Suspended Solids	2024/03/23	NC		%	20
B316377	JB9	RPD [CLA968-07]	Total Oil and grease	2024/03/22	18		%	40
B316377	JB9	Matrix Spike [CLA967-07]	Total Oil and grease	2024/03/22		105	%	70 - 130
B318809	HE1	Matrix Spike [CLA967-01]	Total Suspended Solids	2024/03/23		99	%	80 - 120
B322076	MDO	Matrix Spike [CLA967-06]	Dissolved Organic Carbon (C)	2024/03/25		86	%	80 - 120
B316377	JB9	LCS	Total Oil and grease	2024/03/22		105	%	70 - 130
B317386	DM	LCS	D10-ANTHRACENE (sur.)	2024/03/25		110	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/25		126	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/25		101	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/25		108	%	50 - 130
			Acenaphthene	2024/03/25		101	%	50 - 130
			Acenaphthylene	2024/03/25		103	%	50 - 130
			Acridine	2024/03/25		79	%	50 - 130
			Anthracene	2024/03/25		87	%	50 - 130
			Benzo(a)anthracene	2024/03/25		101	%	50 - 130
			Benzo(b&j)fluoranthene	2024/03/25		110	%	50 - 130
			Benzo(k)fluoranthene	2024/03/25		130	%	50 - 130
			Benzo(g,h,i)perylene	2024/03/25		107	%	50 - 130
			Benzo(c)phenanthrene	2024/03/25		114	%	50 - 130
			Benzo(a)pyrene	2024/03/25		106	%	50 - 130
			Benzo(e)pyrene	2024/03/25		100	%	50 - 130
			Chrysene	2024/03/25		117	%	50 - 130
			Dibenz(a,h)anthracene	2024/03/25		111	%	50 - 130
			Fluoranthene	2024/03/25		112	%	50 - 130
			Fluorene	2024/03/25		100	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/03/25		96	%	50 - 130
			2-Methylnaphthalene	2024/03/25		96	%	50 - 130
			Naphthalene	2024/03/25		105	%	50 - 130
			Phenanthrene	2024/03/25		126	%	50 - 130
			Perylene	2024/03/25		106	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2024/03/25		104	%	50 - 130
			Quinoline	2024/03/25		95	%	50 - 130
			C1-Naphthalene	2024/03/25		87	%	50 - 130
			C3-Naphthalene	2024/03/25		105	%	50 - 130
			C2-Naphthalene	2024/03/25		101	%	50 - 130
			C1-biphenyl	2024/03/25		100	%	50 - 130
			C1 phenanthrene/anthracene	2024/03/25		116	%	50 - 130
			C2 phenanthrene/anthracene	2024/03/25		110	%	50 - 130
			C1 fluoranthene/pyrene	2024/03/25		103	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/03/25		84	%	30 - 130
			1-Methylnaphthalene	2024/03/25		87	%	50 - 130
B318568	CHA	LCS	O-TERPHENYL (sur.)	2024/03/22		106	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/22		104	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/03/22		99	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/03/22		92	%	60 - 140
B318809	HE1	LCS	Total Suspended Solids	2024/03/23		103	%	80 - 120
B318830	DVN	LCS	Total Dissolved Solids	2024/03/22		100	%	80 - 120
B318837	DVN	LCS	Turbidity	2024/03/21		99	%	80 - 120
B319241	AP1	LCS	Chemical Oxygen Demand	2024/03/21		100	%	80 - 120
B319569	WPK	LCS	1,4-Difluorobenzene (sur.)	2024/03/22		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/22		102	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/22		96	%	50 - 140
			Benzene	2024/03/22		93	%	60 - 130
			Toluene	2024/03/22		96	%	60 - 130
			Ethylbenzene	2024/03/22		94	%	60 - 130
			m & p-Xylene	2024/03/22		96	%	60 - 130
			o-Xylene	2024/03/22		93	%	60 - 130
			F1 (C6-C10)	2024/03/22		108	%	60 - 140
B319618	BYM	LCS	Total Sulphide	2024/03/22		92	%	80 - 120
B320461	TOR	LCS	True Colour	2024/03/22		102	%	80 - 120
B320484	CTU	LCS	Total Nitrogen (N)	2024/03/22		101	%	80 - 120
B320498	MAP	LCS	Orthophosphate (P)	2024/03/22		101	%	80 - 120
B320585	SKM	LCS	Chloride (Cl)	2024/03/22		95	%	80 - 120
			Sulphate (SO4)	2024/03/22		90	%	80 - 120
B320599	ISW	LCS	Total Ammonia (N)	2024/03/22		100	%	80 - 120
B320671	ISW	LCS	Nitrite (N)	2024/03/22		98	%	80 - 120
			Nitrate plus Nitrite (N)	2024/03/22		105	%	80 - 120
B320704	A5S	LCS	Alkalinity (Total as CaCO3)	2024/03/22		99	%	80 - 120
B320706	A5S	LCS	pH	2024/03/22		100	%	97 - 103
B320707	A5S	LCS	Conductivity	2024/03/22		101	%	90 - 110
B321936	KKC	LCS	Total Aluminum (Al)	2024/03/25		96	%	80 - 120
			Total Chromium (Cr)	2024/03/25		98	%	80 - 120
			Total Cobalt (Co)	2024/03/25		97	%	80 - 120
			Total Copper (Cu)	2024/03/25		97	%	80 - 120
			Total Lead (Pb)	2024/03/25		97	%	80 - 120
			Total Antimony (Sb)	2024/03/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/03/25		97	%	80 - 120
			Total Nickel (Ni)	2024/03/25		96	%	80 - 120
			Total Selenium (Se)	2024/03/25		102	%	80 - 120
			Total Silver (Ag)	2024/03/25		96	%	80 - 120
			Total Arsenic (As)	2024/03/25		97	%	80 - 120
			Total Thallium (Tl)	2024/03/25		100	%	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
			Total Tin (Sn)	2024/03/25		94	%	80 - 120
			Total Titanium (Ti)	2024/03/25		98	%	80 - 120
			Total Uranium (U)	2024/03/25		99	%	80 - 120
			Total Vanadium (V)	2024/03/25		96	%	80 - 120
			Total Zinc (Zn)	2024/03/25		96	%	80 - 120
			Total Beryllium (Be)	2024/03/25		94	%	80 - 120
B321941	VSC	LCS	Total Iron (Fe)	2024/03/26		107	%	80 - 120
			Total Lithium (Li)	2024/03/26		104	%	80 - 120
			Total Magnesium (Mg)	2024/03/26		102	%	80 - 120
			Total Manganese (Mn)	2024/03/26		108	%	80 - 120
			Total Potassium (K)	2024/03/26		103	%	80 - 120
			Total Sodium (Na)	2024/03/26		103	%	80 - 120
			Total Strontium (Sr)	2024/03/26		103	%	80 - 120
			Total Sulphur (S)	2024/03/26		100	%	80 - 120
			Total Phosphorus (P)	2024/03/26		101	%	80 - 120
			Total Barium (Ba)	2024/03/26		106	%	80 - 120
			Total Silicon (Si)	2024/03/26		105	%	80 - 120
			Total Boron (B)	2024/03/26		110	%	80 - 120
			Total Calcium (Ca)	2024/03/26		102	%	80 - 120
B322076	MDO	LCS	Dissolved Organic Carbon (C)	2024/03/25		97	%	80 - 120
B322208	HQV	LCS	Dissolved Iron (Fe)	2024/03/25		100	%	80 - 120
			Dissolved Lithium (Li)	2024/03/25		92	%	80 - 120
			Dissolved Magnesium (Mg)	2024/03/25		94	%	80 - 120
			Dissolved Manganese (Mn)	2024/03/25		98	%	80 - 120
			Dissolved Potassium (K)	2024/03/25		97	%	80 - 120
			Dissolved Sodium (Na)	2024/03/25		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/03/25		94	%	80 - 120
			Dissolved Sulphur (S)	2024/03/25		94	%	80 - 120
			Dissolved Phosphorus (P)	2024/03/25		93	%	80 - 120
			Dissolved Barium (Ba)	2024/03/25		96	%	80 - 120
			Dissolved Silicon (Si)	2024/03/25		94	%	80 - 120
			Dissolved Boron (B)	2024/03/25		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/03/25		92	%	80 - 120
B322450	MDO	LCS	Total Organic Carbon (C)	2024/03/26		97	%	80 - 120
B322915	KKC	LCS	Dissolved Aluminum (Al)	2024/03/26		107	%	80 - 120
			Dissolved Chromium (Cr)	2024/03/26		100	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/26		100	%	80 - 120
			Dissolved Copper (Cu)	2024/03/26		100	%	80 - 120
			Dissolved Lead (Pb)	2024/03/26		97	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/26		103	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/03/26		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/26		97	%	80 - 120
			Dissolved Selenium (Se)	2024/03/26		93	%	80 - 120
			Dissolved Silver (Ag)	2024/03/26		97	%	80 - 120
			Dissolved Arsenic (As)	2024/03/26		96	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/26		97	%	80 - 120
			Dissolved Tin (Sn)	2024/03/26		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/26		98	%	80 - 120
			Dissolved Uranium (U)	2024/03/26		99	%	80 - 120
			Dissolved Vanadium (V)	2024/03/26		102	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/26		91	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/26		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
B322918	KH2	LCS	Dissolved Aluminum (Al)	2024/03/26		102	%	80 - 120
			Dissolved Chromium (Cr)	2024/03/26		93	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/26		93	%	80 - 120
			Dissolved Copper (Cu)	2024/03/26		95	%	80 - 120
			Dissolved Lead (Pb)	2024/03/26		91	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/26		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/03/26		94	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/26		93	%	80 - 120
			Dissolved Selenium (Se)	2024/03/26		95	%	80 - 120
			Dissolved Silver (Ag)	2024/03/26		93	%	80 - 120
			Dissolved Arsenic (As)	2024/03/26		91	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/26		90	%	80 - 120
			Dissolved Tin (Sn)	2024/03/26		95	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/26		95	%	80 - 120
			Dissolved Uranium (U)	2024/03/26		90	%	80 - 120
			Dissolved Vanadium (V)	2024/03/26		94	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/26		90	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/26		93	%	80 - 120
B323356	YHK	LCS	Dissolved Organic Carbon (C)	2024/03/27		92	%	80 - 120
B323357	YHK	LCS	Total Organic Carbon (C)	2024/03/27		103	%	80 - 120
B323778	KKM	LCS	Total Mercury (Hg)	2024/03/27		95	%	80 - 120
B323936	KKM	LCS	Dissolved Mercury (Hg)	2024/03/27		96	%	80 - 120
B320484	CTU	SRM	Total Nitrogen (N)	2024/03/22		99	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

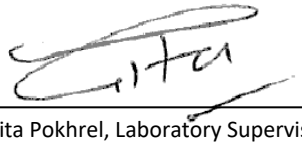
Bureau Veritas Job #: C419662
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223-23200

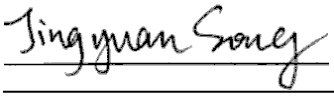
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Gita Pokhrel, Laboratory Supervisor



Jingyuan Song, QP, Organics – Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Automated Statchk

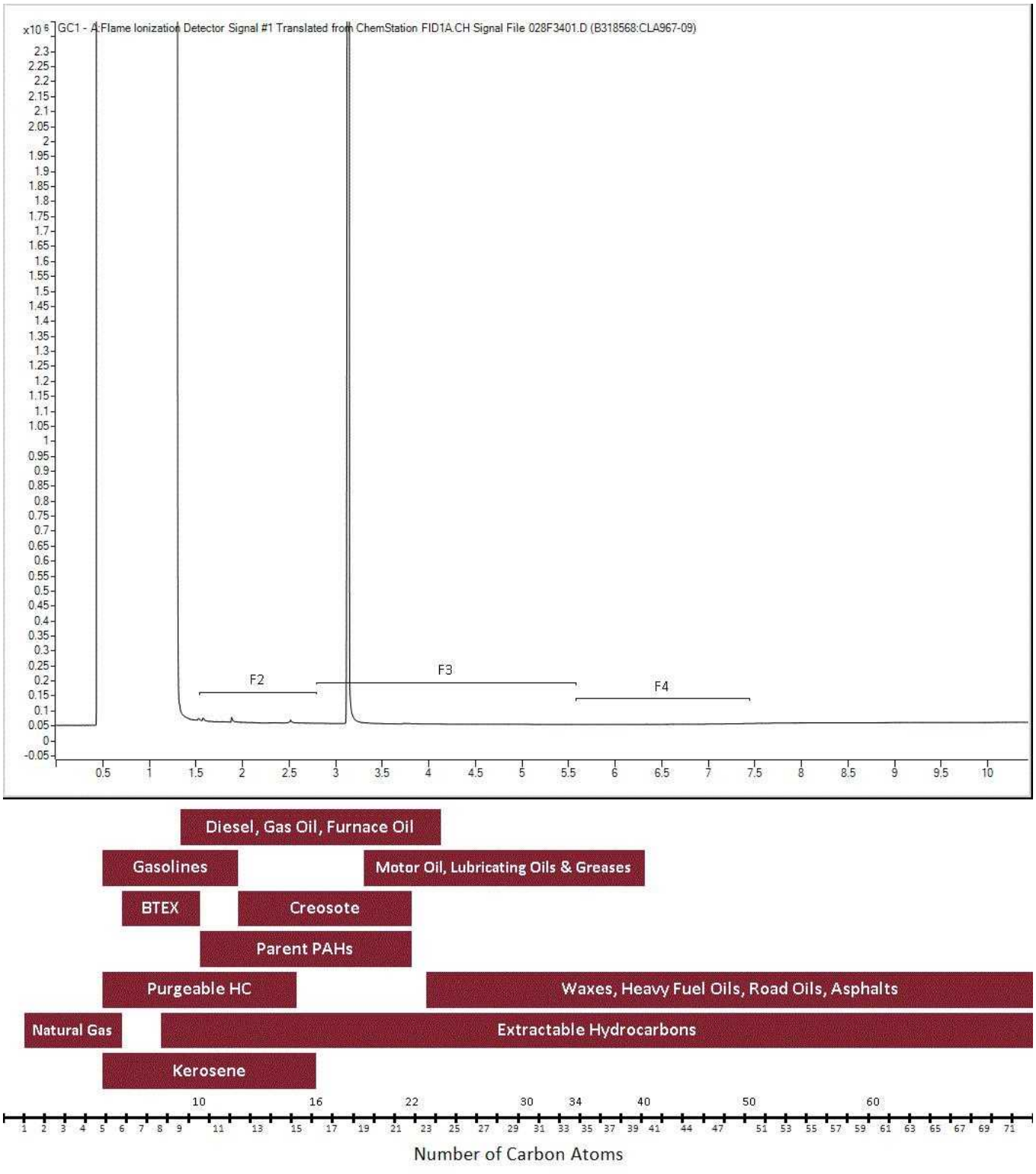
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C419662
Report Date: 2024/04/04
Bureau Veritas Sample: CLA967

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DS-09

CCME Hydrocarbons (F2-F4 in water) Chromatogram



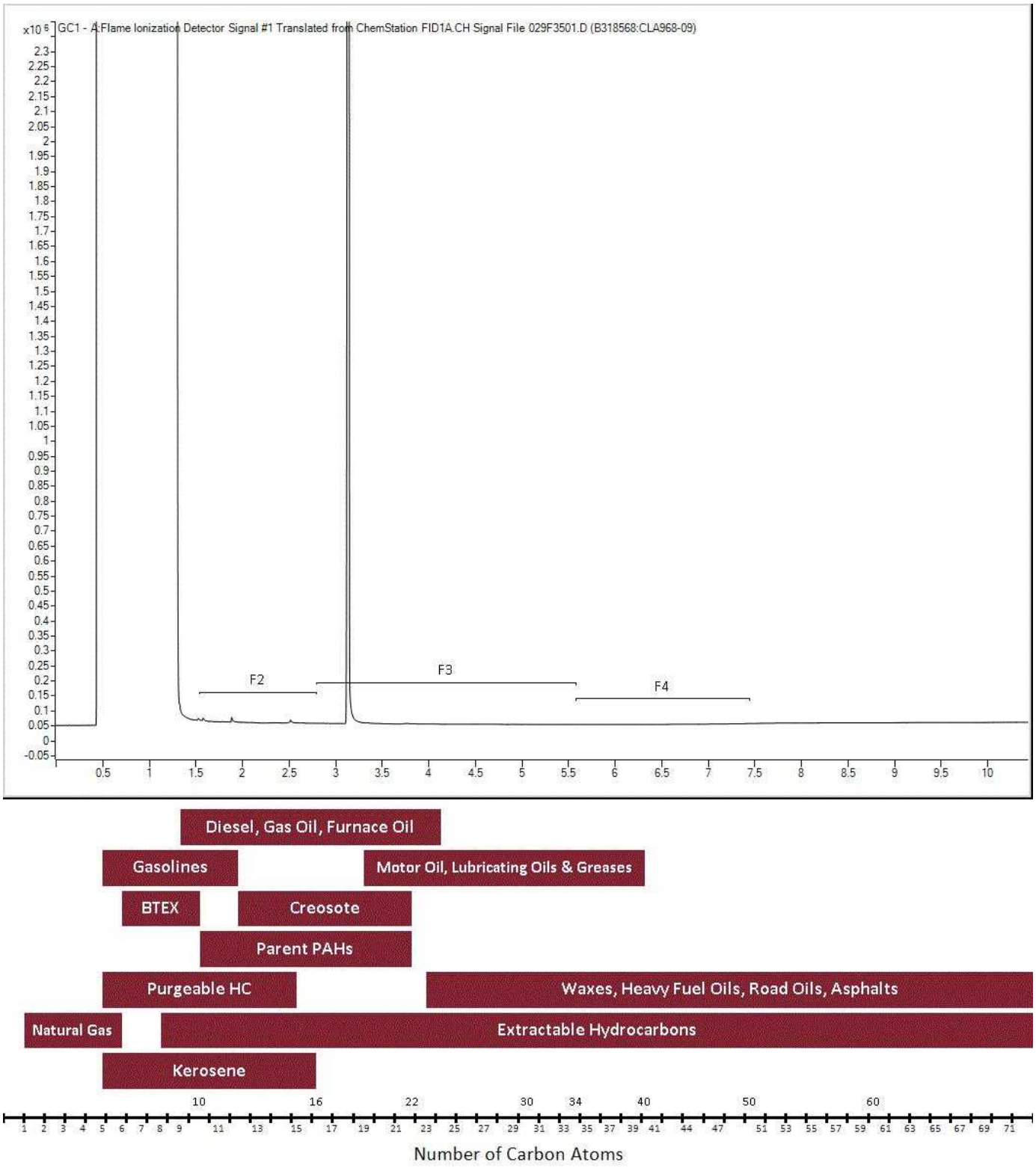
hpchem12\HPchem\1\DATA\2024\03\RUN0322

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

Bureau Veritas Job #: C419662
Report Date: 2024/04/04
Bureau Veritas Sample: CLA968

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DS-05

CCME Hydrocarbons (F2-F4 in water) Chromatogram



hpchem12\HPchem\1\DATA\2024\03\RUN0322

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

Maxxam
A Bureau Veritas Group Company

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Fax: (780) 450-4187
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360

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 299611

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 897 6249	Ph: 587-897-6249
Sampler Name (Print): Alex Haigh / Stacy Gibb	Consultant Project #: 417085-49223-23200

ANALYSIS REQUESTED

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	Oil & Grease	Tot. DOC, Sulphide	Nitrate, Nitrite, Ammonia, Total TKN	Chlorophyll a	Sulphur, total & dissolved	Alkylated PAH, TPH	BTEX may have headspace
1 AEMP-DS-09		X			18	2024/03/17	14:45	X			X		X						X	X					X			X	X	X	X	X	X	X	X
2 AEMP-DS-05		X			18	2024/03/17	13:47	X			X		X						X	X					X			X	X	X	X	X	X	X	X
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A ~~417085-49223-23200~~ SG

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-49223-23200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: canada.chemistry@worley.com; cdal_ior_datatracking@worley.com; stacy.gibb@worley.com; IES A2601436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

LAB USE ONLY
MAXXAM JOB #: C419662

	YES	NO	COOLER ID #	TEMP °C			YES	NO	COOLER ID #	TEMP °C			YES	NO	COOLER ID #	TEMP °C			
SEAL PRESENT	✓						✓		mCAL										
SEAL INTACT	✓						✓												
COOLING MEDIA PRESENT	✓			5 (1)	2 (2)	4 (3)	✓			2 (1)	2 (2)	2 (3)				1	2	3	

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1.	Stacy Gibb 2024/03/18	10:10	1. Deji Wu	2024/03/20	13:23
2. DJ	DEJI WU 2024/03/20	16:20	2.	SEAN ENG 2024/03/21	07:00
3.			3.		

SAMPLES
LABELED BY: AZE
VERIFIED BY: DW

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299612

Attention: Alex Haigh

Imperial Oil Ltd - Worley Parsons
IES A2601436
Suite 300, 8615 51 Ave
Edmonton, AB
CANADA T6E 6A8

Report Date: 2024/04/04
Report #: R3483403
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419865
Received: 2024/03/20, 13:23

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease (Gravimetric, n-Hexane) (1)	2	AB SOP-00092	SM 23 5520B/5520F m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
Orthophosphate by Automated Analyzer (1, 7)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299612

Attention: Alex Haigh

Imperial Oil Ltd - Worley Parsons
IES A2601436
Suite 300, 8615 51 Ave
Edmonton, AB
CANADA T6E 6A8

Report Date: 2024/04/04
Report #: R3483403
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419865
Received: 2024/03/20, 13:23

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 8)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	1	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

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Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299612

Attention: Alex Haigh

Imperial Oil Ltd - Worley Parsons
IES A2601436
Suite 300, 8615 51 Ave
Edmonton, AB
CANADA T6E 6A8

Report Date: 2024/04/04
Report #: R3483403
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419865

Received: 2024/03/20, 13:23

(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(8) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
04 Apr 2024 11:51:40

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C419865
Report Date: 2024/04/04

Imperial Oil Ltd - Worley Parsons
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CLB752			CLB752			CLB753		
Sampling Date		2024/03/17 11:10			2024/03/17 11:10			2024/03/17 12:15		
COC Number		299612			299612			299612		
	UNITS	**AEMO-US-02**	**RDL**	**QC Batch**	**AEMO-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMO-US-03**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B319713				<0.10	0.10	B319713
Volatiles										
Benzene	mg/L	<0.00040	0.00040	B319967	<0.00040	0.00040	B319967	0.00051	0.00040	B319967
Toluene	mg/L	<0.00040	0.00040	B319967	<0.00040	0.00040	B319967	0.0027	0.00040	B319967
Ethylbenzene	mg/L	<0.00040	0.00040	B319967	<0.00040	0.00040	B319967	0.00090	0.00040	B319967
m & p-Xylene	mg/L	<0.00080	0.00080	B319967	<0.00080	0.00080	B319967	0.0038	0.00080	B319967
o-Xylene	mg/L	<0.00040	0.00040	B319967	<0.00040	0.00040	B319967	0.0019	0.00040	B319967
Xylenes (Total)	mg/L	<0.00089	0.00089	B318880				0.0057	0.00089	B318880
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	B318880				<0.10	0.10	B318880
F1 (C6-C10)	mg/L	<0.10	0.10	B319967	<0.10	0.10	B319967	<0.10	0.10	B319967
Extraction Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	96		B319713				96		B319713
Instrument Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	105		B319967	104		B319967	103		B319967
4-Bromofluorobenzene (sur.)	%	98		B319967	98		B319967	96		B319967
D4-1,2-Dichloroethane (sur.)	%	89		B319967	91		B319967	87		B319967

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C419865
Report Date: 2024/04/04

Imperial Oil Ltd - Worley Parsons
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CLB752	CLB753		
Sampling Date		2024/03/17 11:10	2024/03/17 12:15		
COC Number		299612	299612		
	UNITS	**AEMO-US-02**	**AEMO-US-03**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.14	0.13	0.020	B320627
Nutrients					
Total Nitrogen (N)	mg/L	0.33	0.32	0.020	B321574
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CLB752	CLB753		
Sampling Date		2024/03/17 11:10	2024/03/17 12:15		
COC Number		299612	299612		
	UNITS	**AEMO-US-02**	**AEMO-US-03**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	<0.000020	<0.000020	0.000020	B318882
Total Aluminum (Al)	mg/L	0.046	0.025	0.0030	B321936
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B321936
Total Arsenic (As)	mg/L	0.00041	0.00034	0.00020	B321936
Total Barium (Ba)	mg/L	0.041	0.040	0.010	B321941
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B321936
Total Boron (B)	mg/L	<0.020	<0.020	0.020	B321941
Total Calcium (Ca)	mg/L	29	29	0.30	B321941
Total Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B321936
Total Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B321936
Total Copper (Cu)	mg/L	0.0012	0.0013	0.0010	B321936
Total Iron (Fe)	mg/L	0.062	<0.060	0.060	B321941
Total Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B321936
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B321941
Total Magnesium (Mg)	mg/L	9.4	9.6	0.20	B321941
Total Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B321941
Total Molybdenum (Mo)	mg/L	0.0010	0.0010	0.00020	B321936
Total Nickel (Ni)	mg/L	0.0012	0.0010	0.00050	B321936
Total Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B321941
Total Potassium (K)	mg/L	0.92	0.91	0.30	B321941
Total Selenium (Se)	mg/L	0.00024	0.00025	0.00020	B321936
Total Silicon (Si)	mg/L	1.9	1.9	0.50	B321941
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B321936
Total Sodium (Na)	mg/L	9.7	9.5	0.50	B321941
Total Strontium (Sr)	mg/L	0.22	0.23	0.020	B321941
Total Sulphur (S)	mg/L	9.9	10	0.20	B321941
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B321936
Total Tin (Sn)	mg/L	<0.0010	0.022	0.0010	B321936
Total Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B321936
Total Uranium (U)	mg/L	0.00083	0.00077	0.00010	B321936
Total Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B321936
RDL = Reportable Detection Limit					

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CLB752	CLB753		
Sampling Date		2024/03/17 11:10	2024/03/17 12:15		
COC Number		299612	299612		
	UNITS	**AEMO-US-02**	**AEMO-US-03**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B321936
RDL = Reportable Detection Limit					

Bureau Veritas Job #: C419865
Report Date: 2024/04/04

Imperial Oil Ltd - Worley Parsons
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLB752			CLB752			CLB753		
Sampling Date		2024/03/17 11:10			2024/03/17 11:10			2024/03/17 12:15		
COC Number		299612			299612			299612		
	UNITS	**AEMO-US-02**	**RDL**	**QC Batch**	**AEMO-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMO-US-03**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	140	0.50	B319114				130	0.50	B319114
Ion Balance (% Difference)	%	6.9	N/A	B319078				5.7	N/A	B319078
Nitrate (N)	mg/L	0.20	0.010	B319178				0.20	0.010	B319178
Nitrate (NO3)	mg/L	0.87	0.044	B320630				0.87	0.044	B320630
Nitrite (NO2)	mg/L	<0.033	0.033	B320630				<0.033	0.033	B320630
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B318885				0.0030	0.0020	B318885
Demand Parameters										
Chemical Oxygen Demand	mg/L	<10 (1)	10	B321696	<10	10	B321696	10	10	B321696
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B318881				<0.000020	0.000020	B318881
Misc. Inorganics										
Conductivity	uS/cm	270	2.0	B320738				270	2.0	B320738
Dissolved Organic Carbon (C)	mg/L	3.1	0.50	B322076				2.8	0.50	B322076
Total Organic Carbon (C)	mg/L	3.2	0.50	B322450				3.3	0.50	B322450
Total Dissolved Solids	mg/L	170	10	B320220				160	10	B320220
Total Suspended Solids	mg/L	<0.99	0.99	B319927				<1.0	1.0	B319927
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B320733				<1.0	1.0	B320733
Alkalinity (Total as CaCO3)	mg/L	91	1.0	B320733				91	1.0	B320733
Bicarbonate (HCO3)	mg/L	110	1.0	B320733				110	1.0	B320733
Carbonate (CO3)	mg/L	<1.0	1.0	B320733				<1.0	1.0	B320733
Hydroxide (OH)	mg/L	<1.0	1.0	B320733				<1.0	1.0	B320733
Total Sulphide	mg/L	<0.0018	0.0018	B320666				0.0029	0.0018	B320666
Chloride (Cl)	mg/L	11	1.0	B320585				11	1.0	B320585
Sulphate (SO4)	mg/L	34	1.0	B320585				33	1.0	B320585
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B321246				<0.015	0.015	B321246

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C419865
Report Date: 2024/04/04

Imperial Oil Ltd - Worley Parsons
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLB752			CLB752			CLB753		
Sampling Date		2024/03/17 11:10			2024/03/17 11:10			2024/03/17 12:15		
COC Number		299612			299612			299612		
	UNITS	**AEMO-US-02**	**RDL**	**QC Batch**	**AEMO-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMO-US-03**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B320498	<0.0030	0.0030	B320498	<0.0030	0.0030	B320498
Nitrite (N)	mg/L	<0.010	0.010	B320671				<0.010	0.010	B320671
Nitrate plus Nitrite (N)	mg/L	0.20	0.010	B320671				0.20	0.010	B320671
Misc. Organics										
Total Oil and grease	mg/L	14	2.0	B316377				13	2.0	B316377
Total Petroleum Hydrocarbon	mg/L							<2.0	2.0	B319599
Physical Properties										
True Colour	PtCo units	2.5	2.0	B320461				2.2	2.0	B320461
Physical Properties										
Turbidity	NTU	2.1	0.10	B319038				2.1	0.10	B319038

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLB752	CLB753		
Sampling Date		2024/03/17 11:10	2024/03/17 12:15		
COC Number		299612	299612		
	UNITS	**AEMO-US-02**	**AEMO-US-03**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B318896
Acenaphthene	ug/L	<0.10	<0.10	0.10	B319712
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B319712
Acridine	ug/L	<0.040	<0.040	0.040	B319712
Anthracene	ug/L	<0.010	<0.010	0.010	B319712
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B319712
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B319712
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B319712
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B319712
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B319712
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B319712
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B319712
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B319712
Fluoranthene	ug/L	<0.010	<0.010	0.010	B319712
Fluorene	ug/L	<0.050	<0.050	0.050	B319712
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B319712
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B319712
2-Methylnaphthalene	ug/L	<0.10	0.81	0.10	B319712
Naphthalene	ug/L	<0.10	1.1	0.10	B319712
Phenanthrene	ug/L	<0.050	<0.050	0.050	B319712
Perylene	ug/L	<0.050	<0.050	0.050	B319712
Pyrene	ug/L	<0.020	<0.020	0.020	B319712
Quinoline	ug/L	<0.20	<0.20	0.20	B319712
Retene	ug/L	<0.050	<0.050	0.050	B319712
C1-Naphthalene	ug/L	<0.10	1.0	0.10	B319712
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B319712
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B319712
C2-Naphthalene	ug/L	<0.10	0.17	0.10	B319712
Biphenyl	ug/L	<0.020	<0.020	0.020	B319712
C1-biphenyl	ug/L	<0.020	0.025	0.020	B319712
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLB752	CLB753		
Sampling Date		2024/03/17 11:10	2024/03/17 12:15		
COC Number		299612	299612		
	UNITS	**AEMO-US-02**	**AEMO-US-03**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B319712
C1-fluorene	ug/L	<0.050	<0.050	0.050	B319712
C2-fluorene	ug/L	<0.050	<0.050	0.050	B319712
C3-fluorene	ug/L	<0.050	<0.050	0.050	B319712
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B319712
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B319712
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B319712
1-Methylnaphthalene	ug/L	<0.10	0.30	0.10	B319712
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	104	113		B319712
D8-ACENAPHTHYLENE (sur.)	%	93	101		B319712
D8-NAPHTHALENE (sur.)	%	97	102		B319712
TERPHENYL-D14 (sur.)	%	115	125		B319712
RDL = Reportable Detection Limit					

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CLB752			CLB753		
Sampling Date		2024/03/17 11:10			2024/03/17 12:15		
COC Number		299612			299612		
	UNITS	**AEMO-US-02**	**RDL**	**QC Batch**	**AEMO-US-03**	**RDL**	**QC Batch**
Elements							
Dissolved Mercury (Hg)	ug/L	<0.014 (1)	0.014	B323936	<0.021 (1)	0.021	B323936
Total Mercury (Hg)	ug/L	<0.0019	0.0019	B323778	<0.0019	0.0019	B324612

RDL = Reportable Detection Limit
(1) Mercury RDL raised due to background interference.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CLB752	CLB753		
Sampling Date		2024/03/17 11:10	2024/03/17 12:15		
COC Number		299612	299612		
	UNITS	**AEMO-US-02**	**AEMO-US-03**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.0030	<0.0030	0.0030	B322189
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B322189
Dissolved Arsenic (As)	mg/L	<0.00020	<0.00020	0.00020	B322189
Dissolved Barium (Ba)	mg/L	0.046	0.043	0.010	B322174
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B322189
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B322174
Dissolved Calcium (Ca)	mg/L	35	34	0.30	B322174
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B322189
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B322189
Dissolved Copper (Cu)	mg/L	0.0011	<0.0010	0.0010	B322189
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B322174
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B322189
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	B322174
Dissolved Magnesium (Mg)	mg/L	12	12	0.20	B322174
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B322174
Dissolved Molybdenum (Mo)	mg/L	0.00054	0.00055	0.00020	B322189
Dissolved Nickel (Ni)	mg/L	0.00061	0.00069	0.00050	B322189
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B322174
Dissolved Potassium (K)	mg/L	1.2	1.2	0.30	B322174
Dissolved Selenium (Se)	mg/L	<0.00020	<0.00020	0.00020	B322189
Dissolved Silicon (Si)	mg/L	1.9	1.9	0.50	B322174
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B322189
Dissolved Sodium (Na)	mg/L	12	11	0.50	B322174
Dissolved Strontium (Sr)	mg/L	0.26	0.26	0.020	B322174
Dissolved Sulphur (S)	mg/L	12	12	0.20	B322174
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B322189
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B322189
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B322189
Dissolved Uranium (U)	mg/L	0.00045	0.00048	0.00010	B322189
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B322189
Dissolved Zinc (Zn)	mg/L	0.0035	<0.0030	0.0030	B322189
RDL = Reportable Detection Limit					

Bureau Veritas Job #: C419865
Report Date: 2024/04/04

Imperial Oil Ltd - Worley Parsons
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLB752
Sample ID: AEMO-US-02
Matrix: Water

Collected: 2024/03/17
Relinquished: 2024/03/18
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B320733	N/A	2024/03/23	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B319967	N/A	2024/03/22	Wonjeong Park
F1-BTEX	CALC/MS	B318880	N/A	2024/03/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B318881	N/A	2024/03/26	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B318882	N/A	2024/03/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B320585	N/A	2024/03/22	Shanna McKort
COD by Colorimeter	M/PROB	B321696	N/A	2024/03/25	Amy Phan
True Colour	SPEC/COL	B320461	N/A	2024/03/22	Tyler Orr
Carbon (DOC)	TECH	B322076	N/A	2024/03/25	Ming Dong
Conductivity @25C	COND	B320738	N/A	2024/03/23	Ayesha Shakoor
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B319713	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B318885	N/A	2024/03/23	Automated Statchk
Hardness	CALC	B319114	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B323936	2024/03/21	2024/03/27	Kiran Kumari
Mercury (Total) by CV	CV	B323778	2024/03/21	2024/03/27	Kiran Kumari
Elements by ICP - Dissolved	ICPA	B322174	N/A	2024/03/25	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B321941	2024/03/25	2024/03/26	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B322189	N/A	2024/03/25	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B321936	2024/03/25	2024/03/25	Kristijan Kovac
Ion Balance	CALC	B319078	N/A	2024/03/26	Automated Statchk
Ammonia-N (Total)	KONE	B321246	N/A	2024/03/24	Isabelle White
Nitrate and Nitrite	CALC	B320630	N/A	2024/03/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B320671	N/A	2024/03/22	Isabelle White
Nitrate (as N)	CALC	B319178	2024/03/23	2024/03/23	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B316377	2024/03/22	2024/03/22	Junyan Ban
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B318896	N/A	2024/03/27	Automated Statchk
Orthophosphate by Automated Analyzer	KONE	B320498	N/A	2024/03/22	Mary Anne Dela Cruz
Total Sulphide	SPEC	B320666	N/A	2024/03/22	Irene Donita Villanueva
Total Dissolved Solids (Filt. Residue)	BAL	B320220	2024/03/22	2024/03/23	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B320627	N/A	2024/03/25	Automated Statchk
Nitrogen (Total)	AC/COL	B321574	2024/03/25	2024/03/25	Mary Anne Dela Cruz
Carbon (Total Organic)	TECH	B322450	N/A	2024/03/26	Ming Dong
Total Suspended Solids (NFR)	BAL	B319927	2024/03/22	2024/03/22	Haydee Estilong
Turbidity	TURB	B319038	N/A	2024/03/21	Daryl Viktoria Noval

Bureau Veritas ID: CLB752 Dup
Sample ID: AEMO-US-02
Matrix: Water

Collected: 2024/03/17
Relinquished: 2024/03/18
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B319967	N/A	2024/03/22	Wonjeong Park
COD by Colorimeter	M/PROB	B321696	N/A	2024/03/25	Amy Phan
Orthophosphate by Automated Analyzer	KONE	B320498	N/A	2024/03/22	Mary Anne Dela Cruz

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Bureau Veritas Job #: C419865
Report Date: 2024/04/04

Imperial Oil Ltd - Worley Parsons
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLB753
Sample ID: AEMO-US-03
Matrix: Water

Collected: 2024/03/17
Relinquished: 2024/03/18
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B320733	N/A	2024/03/23	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B319967	N/A	2024/03/22	Wonjeong Park
F1-BTEX	CALC/MS	B318880	N/A	2024/03/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B318881	N/A	2024/03/26	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B318882	N/A	2024/03/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B320585	N/A	2024/03/22	Shanna McKort
COD by Colorimeter	M/PROB	B321696	N/A	2024/03/25	Amy Phan
True Colour	SPEC/COL	B320461	N/A	2024/03/22	Tyler Orr
Carbon (DOC)	TECH	B322076	N/A	2024/03/25	Ming Dong
Conductivity @25C	COND	B320738	N/A	2024/03/23	Ayesha Shakoor
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B319713	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B318885	N/A	2024/03/23	Automated Statchk
Hardness	CALC	B319114	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B323936	2024/03/21	2024/03/27	Kiran Kumari
Mercury (Total) by CV	CV	B324612	2024/03/21	2024/03/27	Kiran Kumari
Elements by ICP - Dissolved	ICPA	B322174	N/A	2024/03/25	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B321941	2024/03/25	2024/03/26	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B322189	N/A	2024/03/25	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B321936	2024/03/25	2024/03/25	Kristijan Kovac
Ion Balance	CALC	B319078	N/A	2024/03/26	Automated Statchk
Ammonia-N (Total)	KONE	B321246	N/A	2024/03/24	Isabelle White
Nitrate and Nitrite	CALC	B320630	N/A	2024/03/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B320671	N/A	2024/03/22	Isabelle White
Nitrate (as N)	CALC	B319178	2024/03/23	2024/03/23	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B316377	2024/03/22	2024/03/22	Junyan Ban
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B318896	N/A	2024/03/27	Automated Statchk
Orthophosphate by Automated Analyzer	KONE	B320498	N/A	2024/03/22	Mary Anne Dela Cruz
Total Sulphide	SPEC	B320666	N/A	2024/03/22	Irene Donita Villanueva
Total Dissolved Solids (Filt. Residue)	BAL	B320220	2024/03/22	2024/03/23	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B320627	N/A	2024/03/25	Automated Statchk
Nitrogen (Total)	AC/COL	B321574	2024/03/25	2024/03/25	Mary Anne Dela Cruz
Carbon (Total Organic)	TECH	B322450	N/A	2024/03/26	Ming Dong
Hydrocarbon by IR (Mineral oil & grease)	IR	B319599	2024/03/25	2024/03/26	Chuhan Huang
Total Suspended Solids (NFR)	BAL	B319927	2024/03/22	2024/03/22	Haydee Estilong
Turbidity	TURB	B319038	N/A	2024/03/21	Daryl Viktoria Noval

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GENERAL COMMENTS

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

Package 1	3.3°C

AEMP-US-02 (CLB752) limited sample- Unable to proceed with TPHIR, informed client and proceeded with Oil and grease (gravimetric, n-Hexane) analysis only as per confirmation from Alex Haigh.

Sample CLB752 [AEMO-US-02] : Sample was analyzed past method specified hold time for Turbidity. 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 True Colour. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CLB753 [AEMO-US-03] : Sample was analyzed past method specified hold time for Turbidity. 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 True Colour. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CLB752	AEMO-US-02	Water	COLOURT-W	PHYS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLB752	AEMO-US-02	Water	NO23AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLB752	AEMO-US-02	Water	PO4AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLB752	AEMO-US-02	Water	TURB	SPP	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLB753	AEMO-US-03	Water	COLOURT-W	PHYS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLB753	AEMO-US-03	Water	NO23AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLB753	AEMO-US-03	Water	PO4AC-W	NUTS	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CLB753	AEMO-US-03	Water	TURB	SPP	Sample	#11 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B316377	JB9	Method Blank	Total Oil and grease	2024/03/22	<2.0		mg/L	
B319038	DVN	Method Blank	Turbidity	2024/03/21	<0.10		NTU	
B319599	CHA	Method Blank	Total Petroleum Hydrocarbon	2024/03/26	<2.0		mg/L	
B319712	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/03/24		102	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		116	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		83	%	50 - 130
			Acenaphthene	2024/03/24	<0.10		ug/L	
			Acenaphthylene	2024/03/24	<0.10		ug/L	
			Acridine	2024/03/24	<0.040		ug/L	
			Anthracene	2024/03/24	<0.010		ug/L	
			Benzo(a)anthracene	2024/03/24	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/03/24	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/03/24	<0.050		ug/L	
			Benzo(a)pyrene	2024/03/24	<0.0075		ug/L	
			Benzo(e)pyrene	2024/03/24	<0.050		ug/L	
			Chrysene	2024/03/24	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/03/24	<0.0075		ug/L	
			Fluoranthene	2024/03/24	<0.010		ug/L	
			Fluorene	2024/03/24	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/03/24	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/03/24	<0.0085		ug/L	
			2-Methylnaphthalene	2024/03/24	<0.10		ug/L	
			Naphthalene	2024/03/24	<0.10		ug/L	
			Phenanthrene	2024/03/24	<0.050		ug/L	
			Perylene	2024/03/24	<0.050		ug/L	
			Pyrene	2024/03/24	<0.020		ug/L	
			Quinoline	2024/03/24	<0.20		ug/L	
			Retene	2024/03/24	<0.050		ug/L	
			C1-Naphthalene	2024/03/24	<0.10		ug/L	
			C3-Naphthalene	2024/03/24	<0.10		ug/L	
			C4-Naphthalene	2024/03/24	<0.10		ug/L	
			C2-Naphthalene	2024/03/24	<0.10		ug/L	
			Biphenyl	2024/03/24	<0.020		ug/L	
			C1-biphenyl	2024/03/24	<0.020		ug/L	
			C2-biphenyl	2024/03/24	<0.020		ug/L	
			C1-fluorene	2024/03/24	<0.050		ug/L	
			C2-fluorene	2024/03/24	<0.050		ug/L	
			C3-fluorene	2024/03/24	<0.050		ug/L	
			Dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C2-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C3-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C4-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C3 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C1-Acenaphthene	2024/03/24	<0.10		ug/L	
			1-Methylnaphthalene	2024/03/24	<0.10		ug/L	
B319713	BQU	Method Blank	O-TERPHENYL (sur.)	2024/03/24		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24	<0.10		mg/L	
B319927	HE1	Method Blank	Total Suspended Solids	2024/03/22	<1.0		mg/L	
B319967	WPK	Method Blank	1,4-Difluorobenzene (sur.)	2024/03/22		105	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/22		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/22		91	%	50 - 140
			Benzene	2024/03/22	<0.00040		mg/L	
			Toluene	2024/03/22	<0.00040		mg/L	
			Ethylbenzene	2024/03/22	<0.00040		mg/L	
			m & p-Xylene	2024/03/22	<0.00080		mg/L	
			o-Xylene	2024/03/22	<0.00040		mg/L	
			F1 (C6-C10)	2024/03/22	<0.10		mg/L	
B320220	HE1	Method Blank	Total Dissolved Solids	2024/03/23	<10		mg/L	
B320461	TOR	Method Blank	True Colour	2024/03/22	<2.0		PtCo units	
B320498	MAP	Method Blank	Orthophosphate (P)	2024/03/22	<0.0030		mg/L	
B320585	SKM	Method Blank	Chloride (Cl)	2024/03/22	<1.0		mg/L	
			Sulphate (SO4)	2024/03/22	<1.0		mg/L	
B320666	IDV	Method Blank	Total Sulphide	2024/03/22	<0.0018		mg/L	
B320671	ISW	Method Blank	Nitrite (N)	2024/03/22	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/03/22	<0.010		mg/L	
B320733	A5S	Method Blank	Alkalinity (Total as CaCO3)	2024/03/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/03/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/03/23	<1.0		mg/L	
			Carbonate (CO3)	2024/03/23	<1.0		mg/L	
			Hydroxide (OH)	2024/03/23	<1.0		mg/L	
B320738	A5S	Method Blank	Conductivity	2024/03/23	<2.0		uS/cm	
B321246	ISW	Method Blank	Total Ammonia (N)	2024/03/24	<0.015		mg/L	
B321574	MAP	Method Blank	Total Nitrogen (N)	2024/03/25	<0.020		mg/L	
B321696	AP1	Method Blank	Chemical Oxygen Demand	2024/03/25	<10		mg/L	
B321936	KKC	Method Blank	Total Aluminum (Al)	2024/03/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/03/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/03/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/03/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/03/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/03/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/03/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/03/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/03/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/03/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/03/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/03/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/03/25	<0.0010		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Titanium (Ti)	2024/03/25	<0.0010		mg/L	
			Total Uranium (U)	2024/03/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/03/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/03/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/03/25	<0.0010		mg/L	
B321941	VSC	Method Blank	Total Iron (Fe)	2024/03/26	<0.060		mg/L	
			Total Lithium (Li)	2024/03/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/03/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/03/26	<0.0040		mg/L	
			Total Potassium (K)	2024/03/26	<0.30		mg/L	
			Total Sodium (Na)	2024/03/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/03/26	<0.020		mg/L	
			Total Sulphur (S)	2024/03/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/03/26	<0.10		mg/L	
			Total Barium (Ba)	2024/03/26	<0.010		mg/L	
			Total Silicon (Si)	2024/03/26	<0.50		mg/L	
			Total Boron (B)	2024/03/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/03/26	<0.30		mg/L	
B322076	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/03/25	<0.50		mg/L	
B322174	HQV	Method Blank	Dissolved Iron (Fe)	2024/03/25	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/03/25	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/03/25	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/03/25	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/03/25	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/03/25	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/03/25	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/03/25	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/03/25	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/03/25	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/03/25	<0.50		mg/L	
			Dissolved Boron (B)	2024/03/25	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/03/25	<0.30		mg/L	
B322189	KKC	Method Blank	Dissolved Aluminum (Al)	2024/03/25	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/03/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/03/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/03/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/03/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/03/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/03/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/03/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/03/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/03/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/03/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/03/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/03/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/03/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/03/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/03/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/03/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/03/25	<0.0010		mg/L	
B322450	MDO	Method Blank	Total Organic Carbon (C)	2024/03/26	<0.50		mg/L	
B323778	KKM	Method Blank	Total Mercury (Hg)	2024/03/27	<0.0019		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B323936	KKM	Method Blank	Dissolved Mercury (Hg)	2024/03/27	<0.0019		ug/L	
B324612	KKM	Method Blank	Total Mercury (Hg)	2024/03/27	<0.0019		ug/L	
B319967	WPK	RPD [CLB752-14]	Benzene	2024/03/22	NC		%	30
			Toluene	2024/03/22	NC		%	30
			Ethylbenzene	2024/03/22	NC		%	30
			m & p-Xylene	2024/03/22	NC		%	30
			o-Xylene	2024/03/22	NC		%	30
			F1 (C6-C10)	2024/03/22	NC		%	30
B320498	MAP	RPD [CLB752-02]	Orthophosphate (P)	2024/03/22	NC		%	20
B321696	AP1	RPD [CLB752-08]	Chemical Oxygen Demand	2024/03/25	NC		%	20
B319712	JC7	Matrix Spike [CLB753-03]	D10-ANTHRACENE (sur.)	2024/03/24		98	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		108	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		89	%	50 - 130
			Acenaphthene	2024/03/24		99	%	50 - 130
			Acenaphthylene	2024/03/24		97	%	50 - 130
			Acridine	2024/03/24		75	%	50 - 130
			Anthracene	2024/03/24		79	%	50 - 130
			Benzo(a)anthracene	2024/03/24		92	%	50 - 130
			Benzo(b&j)fluoranthene	2024/03/24		97	%	50 - 130
			Benzo(k)fluoranthene	2024/03/24		116	%	50 - 130
			Benzo(g,h,i)perylene	2024/03/24		96	%	50 - 130
			Benzo(c)phenanthrene	2024/03/24		103	%	50 - 130
			Benzo(a)pyrene	2024/03/24		96	%	50 - 130
			Benzo(e)pyrene	2024/03/24		90	%	50 - 130
			Chrysene	2024/03/24		103	%	50 - 130
			Dibenz(a,h)anthracene	2024/03/24		102	%	50 - 130
			Fluoranthene	2024/03/24		101	%	50 - 130
			Fluorene	2024/03/24		92	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/03/24		91	%	50 - 130
			2-Methylnaphthalene	2024/03/24		81	%	50 - 130
			Naphthalene	2024/03/24		77	%	50 - 130
			Phenanthrene	2024/03/24		112	%	50 - 130
			Perylene	2024/03/24		95	%	50 - 130
			Pyrene	2024/03/24		103	%	50 - 130
			Quinoline	2024/03/24		94	%	50 - 130
			C1-Naphthalene	2024/03/24		106	%	50 - 130
			C3-Naphthalene	2024/03/24		96	%	50 - 130
			C2-Naphthalene	2024/03/24		91	%	50 - 130
			C1-biphenyl	2024/03/24		94	%	50 - 130
			C1 phenanthrene/anthracene	2024/03/24		113	%	50 - 130
			C2 phenanthrene/anthracene	2024/03/24		100	%	50 - 130
			C1 fluoranthene/pyrene	2024/03/24		93	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/03/24		76	%	30 - 130
			1-Methylnaphthalene	2024/03/24		77	%	50 - 130
B319967	WPK	Matrix Spike [CLB753-14]	1,4-Difluorobenzene (sur.)	2024/03/22		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/22		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/22		83	%	50 - 140
			Benzene	2024/03/22		90	%	50 - 140
			Toluene	2024/03/22		95	%	50 - 140
			Ethylbenzene	2024/03/22		101	%	50 - 140
			m & p-Xylene	2024/03/22		101	%	50 - 140

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			o-Xylene	2024/03/22		103	%	50 - 140
			F1 (C6-C10)	2024/03/22		101	%	60 - 140
B320498	MAP	Matrix Spike [CLB752-02]	Orthophosphate (P)	2024/03/22		99	%	80 - 120
B321696	AP1	Matrix Spike [CLB752-08]	Chemical Oxygen Demand	2024/03/25		95	%	80 - 120
B316377	JB9	LCS	Total Oil and grease	2024/03/22		105	%	70 - 130
B319038	DVN	LCS	Turbidity	2024/03/21		99	%	80 - 120
B319599	CHA	LCS	Total Petroleum Hydrocarbon	2024/03/26		90	%	70 - 130
B319712	JC7	LCS	D10-ANTHRACENE (sur.)	2024/03/24		105	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		123	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		78	%	50 - 130
			Acenaphthene	2024/03/24		102	%	50 - 130
			Acenaphthylene	2024/03/24		100	%	50 - 130
			Acridine	2024/03/24		80	%	50 - 130
			Anthracene	2024/03/24		84	%	50 - 130
			Benzo(a)anthracene	2024/03/24		104	%	50 - 130
			Benzo(b&j)fluoranthene	2024/03/24		111	%	50 - 130
			Benzo(k)fluoranthene	2024/03/24		119	%	50 - 130
			Benzo(g,h,i)perylene	2024/03/24		109	%	50 - 130
			Benzo(c)phenanthrene	2024/03/24		114	%	50 - 130
			Benzo(a)pyrene	2024/03/24		108	%	50 - 130
			Benzo(e)pyrene	2024/03/24		99	%	50 - 130
			Chrysene	2024/03/24		112	%	50 - 130
			Dibenz(a,h)anthracene	2024/03/24		118	%	50 - 130
			Fluoranthene	2024/03/24		111	%	50 - 130
			Fluorene	2024/03/24		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/03/24		108	%	50 - 130
			2-Methylnaphthalene	2024/03/24		96	%	50 - 130
			Naphthalene	2024/03/24		102	%	50 - 130
			Phenanthrene	2024/03/24		118	%	50 - 130
			Perylene	2024/03/24		103	%	50 - 130
			Pyrene	2024/03/24		114	%	50 - 130
			Quinoline	2024/03/24		104	%	50 - 130
			C1-Naphthalene	2024/03/24		85	%	50 - 130
			C3-Naphthalene	2024/03/24		101	%	50 - 130
			C2-Naphthalene	2024/03/24		100	%	50 - 130
			C1-biphenyl	2024/03/24		99	%	50 - 130
			C1 phenanthrene/anthracene	2024/03/24		114	%	50 - 130
			C2 phenanthrene/anthracene	2024/03/24		110	%	50 - 130
			C1 fluoranthene/pyrene	2024/03/24		107	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/03/24		88	%	30 - 130
			1-Methylnaphthalene	2024/03/24		85	%	50 - 130
B319713	BQU	LCS	O-TERPHENYL (sur.)	2024/03/24		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24		98	%	60 - 140
B319927	HE1	LCS	Total Suspended Solids	2024/03/22		94	%	80 - 120
B319967	WPK	LCS	1,4-Difluorobenzene (sur.)	2024/03/22		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/22		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/22		83	%	50 - 140
			Benzene	2024/03/22		90	%	60 - 130
			Toluene	2024/03/22		94	%	60 - 130
			Ethylbenzene	2024/03/22		101	%	60 - 130
			m & p-Xylene	2024/03/22		101	%	60 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			o-Xylene	2024/03/22		102	%	60 - 130
			F1 (C6-C10)	2024/03/22		107	%	60 - 140
B320220	HE1	LCS	Total Dissolved Solids	2024/03/23		98	%	80 - 120
B320461	TOR	LCS	True Colour	2024/03/22		102	%	80 - 120
B320498	MAP	LCS	Orthophosphate (P)	2024/03/22		101	%	80 - 120
B320585	SKM	LCS	Chloride (Cl)	2024/03/22		95	%	80 - 120
			Sulphate (SO4)	2024/03/22		90	%	80 - 120
B320666	IDV	LCS	Total Sulphide	2024/03/22		95	%	80 - 120
B320671	ISW	LCS	Nitrite (N)	2024/03/22		98	%	80 - 120
			Nitrate plus Nitrite (N)	2024/03/22		105	%	80 - 120
B320733	A5S	LCS	Alkalinity (Total as CaCO3)	2024/03/23		99	%	80 - 120
B320738	A5S	LCS	Conductivity	2024/03/23		101	%	90 - 110
B321246	ISW	LCS	Total Ammonia (N)	2024/03/24		104	%	80 - 120
B321574	MAP	LCS	Total Nitrogen (N)	2024/03/25		107	%	80 - 120
B321696	AP1	LCS	Chemical Oxygen Demand	2024/03/25		101	%	80 - 120
B321936	KKC	LCS	Total Aluminum (Al)	2024/03/25		96	%	80 - 120
			Total Chromium (Cr)	2024/03/25		98	%	80 - 120
			Total Cobalt (Co)	2024/03/25		97	%	80 - 120
			Total Copper (Cu)	2024/03/25		97	%	80 - 120
			Total Lead (Pb)	2024/03/25		97	%	80 - 120
			Total Antimony (Sb)	2024/03/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/03/25		97	%	80 - 120
			Total Nickel (Ni)	2024/03/25		96	%	80 - 120
			Total Selenium (Se)	2024/03/25		102	%	80 - 120
			Total Silver (Ag)	2024/03/25		96	%	80 - 120
			Total Arsenic (As)	2024/03/25		97	%	80 - 120
			Total Thallium (Tl)	2024/03/25		100	%	80 - 120
			Total Tin (Sn)	2024/03/25		94	%	80 - 120
			Total Titanium (Ti)	2024/03/25		98	%	80 - 120
			Total Uranium (U)	2024/03/25		99	%	80 - 120
			Total Vanadium (V)	2024/03/25		96	%	80 - 120
			Total Zinc (Zn)	2024/03/25		96	%	80 - 120
			Total Beryllium (Be)	2024/03/25		94	%	80 - 120
B321941	VSC	LCS	Total Iron (Fe)	2024/03/26		107	%	80 - 120
			Total Lithium (Li)	2024/03/26		104	%	80 - 120
			Total Magnesium (Mg)	2024/03/26		102	%	80 - 120
			Total Manganese (Mn)	2024/03/26		108	%	80 - 120
			Total Potassium (K)	2024/03/26		103	%	80 - 120
			Total Sodium (Na)	2024/03/26		103	%	80 - 120
			Total Strontium (Sr)	2024/03/26		103	%	80 - 120
			Total Sulphur (S)	2024/03/26		100	%	80 - 120
			Total Phosphorus (P)	2024/03/26		101	%	80 - 120
			Total Barium (Ba)	2024/03/26		106	%	80 - 120
			Total Silicon (Si)	2024/03/26		105	%	80 - 120
			Total Boron (B)	2024/03/26		110	%	80 - 120
			Total Calcium (Ca)	2024/03/26		102	%	80 - 120
B322076	MDO	LCS	Dissolved Organic Carbon (C)	2024/03/25		97	%	80 - 120
B322174	HQV	LCS	Dissolved Iron (Fe)	2024/03/25		101	%	80 - 120
			Dissolved Lithium (Li)	2024/03/25		93	%	80 - 120
			Dissolved Magnesium (Mg)	2024/03/25		94	%	80 - 120
			Dissolved Manganese (Mn)	2024/03/25		99	%	80 - 120
			Dissolved Potassium (K)	2024/03/25		98	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Sodium (Na)	2024/03/25		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/03/25		95	%	80 - 120
			Dissolved Sulphur (S)	2024/03/25		94	%	80 - 120
			Dissolved Phosphorus (P)	2024/03/25		93	%	80 - 120
			Dissolved Barium (Ba)	2024/03/25		96	%	80 - 120
			Dissolved Silicon (Si)	2024/03/25		94	%	80 - 120
			Dissolved Boron (B)	2024/03/25		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/03/25		93	%	80 - 120
B322189	KKC	LCS	Dissolved Aluminum (Al)	2024/03/25		106	%	80 - 120
			Dissolved Chromium (Cr)	2024/03/25		108	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/25		109	%	80 - 120
			Dissolved Copper (Cu)	2024/03/25		111	%	80 - 120
			Dissolved Lead (Pb)	2024/03/25		105	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/25		115	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/03/25		107	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/25		107	%	80 - 120
			Dissolved Selenium (Se)	2024/03/25		115	%	80 - 120
			Dissolved Silver (Ag)	2024/03/25		105	%	80 - 120
			Dissolved Arsenic (As)	2024/03/25		107	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/25		106	%	80 - 120
			Dissolved Tin (Sn)	2024/03/25		105	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/25		109	%	80 - 120
			Dissolved Uranium (U)	2024/03/25		105	%	80 - 120
			Dissolved Vanadium (V)	2024/03/25		106	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/25		110	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/25		104	%	80 - 120
B322450	MDO	LCS	Total Organic Carbon (C)	2024/03/26		97	%	80 - 120
B323778	KKM	LCS	Total Mercury (Hg)	2024/03/27		95	%	80 - 120
B323936	KKM	LCS	Dissolved Mercury (Hg)	2024/03/27		96	%	80 - 120
B324612	KKM	LCS	Total Mercury (Hg)	2024/03/27		100	%	80 - 120
B321574	MAP	SRM	Total Nitrogen (N)	2024/03/25		106	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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).

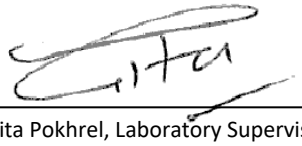
Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Imperial Oil Ltd - Worley Parsons
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

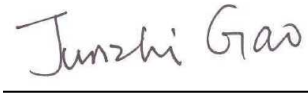
VALIDATION SIGNATURE PAGE

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

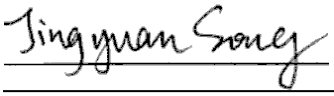
Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Gita Pokhrel, Laboratory Supervisor



Janet Gao, B.Sc., QP, Supervisor, Organics



Jingyuan Song, QP, Organics – Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

VALIDATION SIGNATURE PAGE(CONT'D)

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

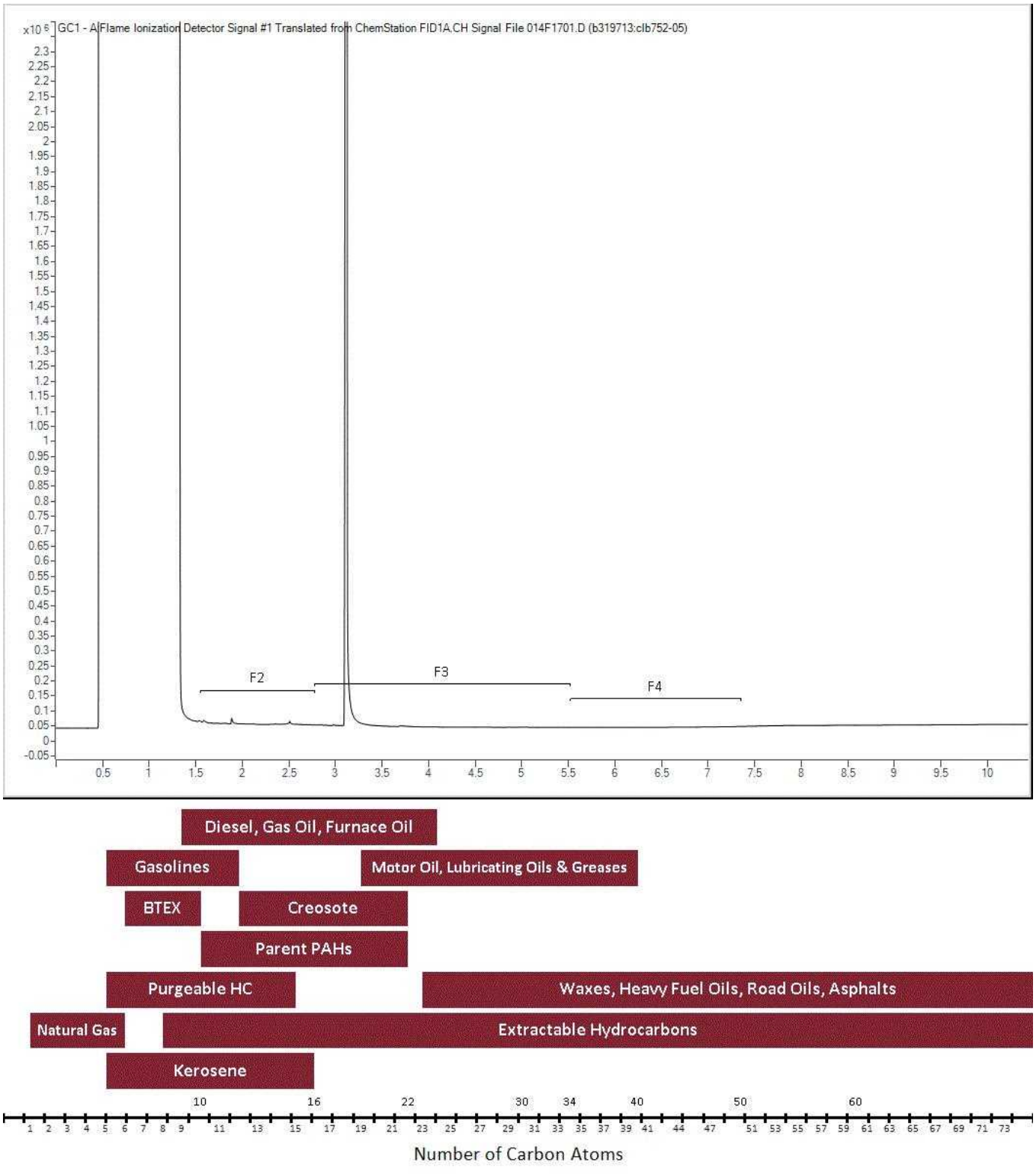
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C419865
Report Date: 2024/04/04
Bureau Veritas Sample: CLB752

Imperial Oil Ltd - Worley Parsons
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMO-US-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



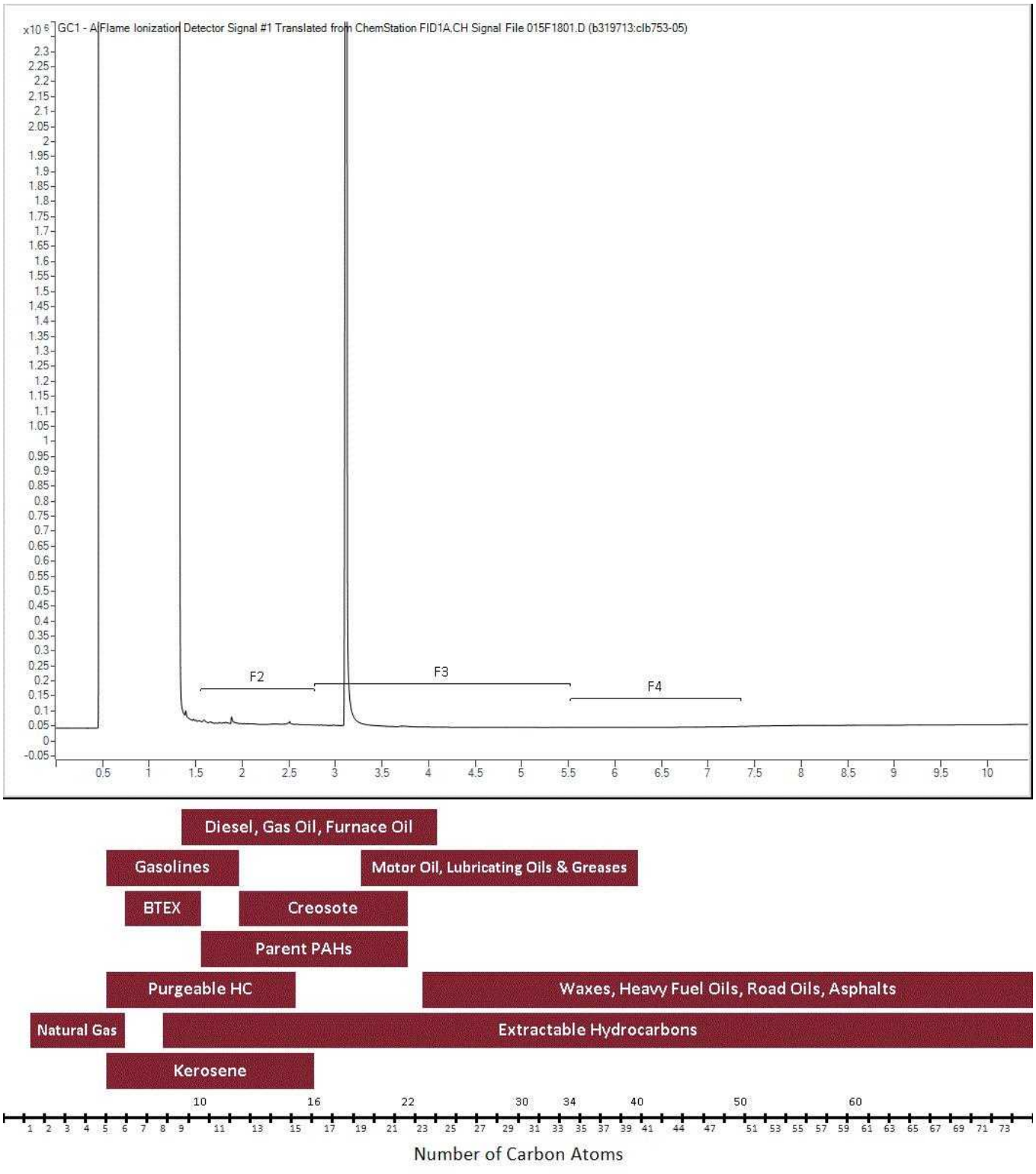
hpchem13\HPchem\1\DATA\2024\03\RUN0324

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

Bureau Veritas Job #: C419865
Report Date: 2024/04/04
Bureau Veritas Sample: CLB753

Imperial Oil Ltd - Worley Parsons
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMO-US-03

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem13\HPchem\1\DATA\2024\03\RUN0324

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

359

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 299612

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 897 6249	Ph: 587 897 6249
Sampler Name (Print): Alex Haigh, Stacy Gibb	Consultant Project #: 417085-49223.23200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1	AEMP-US-02		X			15	2024/03/17	11:10	X	
2	AEMP-US-03		X			18	↓	12:15	X	
3										
4										
5										
6										
7										
8										
9										
10										

ANALYSIS REQUESTED

	Volatile Limited Sample	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Colour, TSS, TDS, Turbidity	Oil + Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (Total), TKN	Orthophosphate	Sulphur - total + dissolved	COD	Alkylated PAH, TPH
1	X	X	X							X	X					X			X	X	X	X	X	X	X
2		X	X							X	X					X			X	X	X	X	X	X	X

mcal-2024-03-1056

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-49223.23200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: Email: canada.chemistry@worley.com
cacal_Tor datatrade@" "
Stacy.gibb@" "
TESA 2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT	✓				2	3	5
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID # MCAL	TEMP °C	1	2	3
SEAL PRESENT	✓				4	8	7
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT							
SEAL INTACT							
COOLING MEDIA PRESENT							

	RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1.	Alex Haigh	2024/03/18	10:00	1. Deji Wu	2024/03/20	13:23
2.	Amanda Acker	2024/03/20	17:30	2. Shaira Lora	2024/03/21	07:00
3.				3.		

LAB USE ONLY
MAXXAM JOB # L419865
SAMPLES
LABELED BY: EPL
VERIFIED BY: SEZ

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299617

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/04
Report #: R3483405
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419882
Received: 2024/03/20, 13:23

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) -Lab Filtered (1, 2)	1	AB SOP-00087	MMCW 119 1996 m
Carbon (DOC) (1, 2)	1	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Filtration (DOC) (1)	1		
Filtration (Metals) (1)	1		
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	1	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	1	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	1	AB SOP-00042	EPA 6010d R5 m
Elements by ICP-Dissolved-Lab Filtered (1, 4)	1	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	1	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS-Dissolved-Lab Filtered (1, 5)	1	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease (Gravimetric, n-Hexane) (1)	2	AB SOP-00092	SM 23 5520B/5520F m

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299617

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/04
Report #: R3483405
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419882
Received: 2024/03/20, 13:23

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Target & Alkylated PAH in Water by GC/MS (1, 6)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 7)	2		Auto Calc
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299617

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/04
Report #: R3483405
Version: 3 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C419882

Received: 2024/03/20, 13:23

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Samples were filtered and preserved at the lab. Values may not reflect concentrations at the time of sampling. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(6) Alkylated PAH results are semiquantitative
(7) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
04 Apr 2024 13:18:17

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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

Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CLB881	CLB882			CLB882		
Sampling Date		2024/03/15 14:31	2024/03/16 12:15			2024/03/16 12:15		
COC Number		299617	299617			299617		
	UNITS	**AEMP-DS-06**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B319713	<0.10	0.10	B319713
Volatiles								
Benzene	mg/L	<0.00040	<0.00040	0.00040	B319967			
Toluene	mg/L	<0.00040	<0.00040	0.00040	B319967			
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B319967			
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B319967			
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B319967			
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B318880			
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B318880			
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B319967			
Extraction Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	97	98		B319713	94		B319713
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	108	107		B319967			
4-Bromofluorobenzene (sur.)	%	92	93		B319967			
D4-1,2-Dichloroethane (sur.)	%	93	95		B319967			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CLB881		CLB882		
Sampling Date		2024/03/15 14:31		2024/03/16 12:15		
COC Number		299617		299617		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Calculated Parameters						
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.59	B320627	0.12	0.020	B320627
Nutrients						
Total Nitrogen (N)	mg/L	0.97	B321574	0.30	0.020	B322720
RDL = Reportable Detection Limit						

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CLB881		CLB882		
Sampling Date		2024/03/15 14:31		2024/03/16 12:15		
COC Number		299617		299617		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	0.00011	B318882	<0.000020	0.000020	B318882
Total Aluminum (Al)	mg/L	1.0	B321936	0.38	0.0030	B321585
Total Antimony (Sb)	mg/L	<0.00060	B321936	<0.00060	0.00060	B321585
Total Arsenic (As)	mg/L	0.0013	B321936	0.00038	0.00020	B321585
Total Barium (Ba)	mg/L	0.13	B321941	0.044	0.010	B321588
Total Beryllium (Be)	mg/L	<0.0010	B321936	<0.0010	0.0010	B321585
Total Boron (B)	mg/L	0.021	B321941	<0.020	0.020	B321588
Total Calcium (Ca)	mg/L	55	B321941	25	0.30	B321588
Total Chromium (Cr)	mg/L	0.0021	B321936	<0.0010	0.0010	B321585
Total Cobalt (Co)	mg/L	0.0016	B321936	<0.00030	0.00030	B321585
Total Copper (Cu)	mg/L	0.0048	B321936	0.0017	0.0010	B321585
Total Iron (Fe)	mg/L	2.9	B321941	0.64	0.060	B321588
Total Lead (Pb)	mg/L	0.0018	B321936	0.00030	0.00020	B321585
Total Lithium (Li)	mg/L	<0.020	B321941	<0.020	0.020	B321588
Total Magnesium (Mg)	mg/L	17	B321941	9.1	0.20	B321588
Total Manganese (Mn)	mg/L	0.057	B321941	0.013	0.0040	B321588
Total Molybdenum (Mo)	mg/L	0.0012	B321936	0.00058	0.00020	B321585
Total Nickel (Ni)	mg/L	0.0056	B321936	0.0014	0.00050	B321585
Total Phosphorus (P)	mg/L	<0.10	B321941	<0.10	0.10	B321588
Total Potassium (K)	mg/L	2.1	B321941	1.1	0.30	B321588
Total Selenium (Se)	mg/L	0.00050	B321936	<0.00020	0.00020	B321585
Total Silicon (Si)	mg/L	6.1	B321941	3.0	0.50	B321588
Total Silver (Ag)	mg/L	<0.00010	B321936	<0.00010	0.00010	B321585
Total Sodium (Na)	mg/L	16	B321941	8.4	0.50	B321588
Total Strontium (Sr)	mg/L	0.36	B321941	0.18	0.020	B321588
Total Sulphur (S)	mg/L	23	B321941	8.2	0.20	B321588
Total Thallium (Tl)	mg/L	<0.00020	B321936	<0.00020	0.00020	B321585
Total Tin (Sn)	mg/L	<0.0010	B321936	<0.0010	0.0010	B321585
Total Titanium (Ti)	mg/L	0.013	B321936	0.011	0.0010	B321585
Total Uranium (U)	mg/L	0.0010	B321936	0.00047	0.00010	B321585
Total Vanadium (V)	mg/L	0.0021	B321936	<0.0010	0.0010	B321585
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CLB881		CLB882		
Sampling Date		2024/03/15 14:31		2024/03/16 12:15		
COC Number		299617		299617		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	0.056	B321936	0.0064	0.0030	B321585
RDL = Reportable Detection Limit						

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLB881			CLB881			CLB882		
Sampling Date		2024/03/15 14:31			2024/03/15 14:31			2024/03/16 12:15		
COC Number		299617			299617			299617		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	210	0.50	B319652				100	0.50	B319114
Ion Balance (% Difference)	%	5.8	N/A	B319078				2.4	N/A	B319078
Nitrate (N)	mg/L	0.38	0.010	B319178				0.19	0.010	B319178
Nitrate (NO3)	mg/L	1.7	0.044	B320630				0.84	0.044	B320630
Nitrite (NO2)	mg/L	<0.033	0.033	B320630				<0.033	0.033	B320630
Sulphide (as H2S)	mg/L	0.0073	0.0020	B318885				0.0043	0.0020	B318885
Demand Parameters										
Chemical Oxygen Demand	mg/L	22	10	B321696				25	10	B321696
Elements										
Dissolved Cadmium (Cd)	mg/L	0.000021	0.000020	B318881				<0.000020	0.000020	B318881
Misc. Inorganics										
Conductivity	uS/cm	430	2.0	B320738				240	2.0	B320738
Dissolved Organic Carbon (C)	mg/L	4.8	0.50	B322076						
Total Organic Carbon (C)	mg/L	5.2	0.50	B322450				2.3	0.50	B322462
Total Dissolved Solids	mg/L	280	10	B320220	280	10	B320220	150	10	B320220
Total Suspended Solids	mg/L	150	1.0	B319927				8.0	1.0	B319927
Lab Filtered Inorganics										
Dissolved Organic Carbon (C)	mg/L							2.3 (1)	0.50	B322454
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B320733				<1.0	1.0	B320733
Alkalinity (Total as CaCO3)	mg/L	130	1.0	B320733				81	1.0	B320733
Bicarbonate (HCO3)	mg/L	150	1.0	B320733				99	1.0	B320733
Carbonate (CO3)	mg/L	<1.0	1.0	B320733				<1.0	1.0	B320733
Hydroxide (OH)	mg/L	<1.0	1.0	B320733				<1.0	1.0	B320733
Total Sulphide	mg/L	0.0069	0.0018	B320666				0.0040	0.0018	B320666
Chloride (Cl)	mg/L	18	1.0	B320585				11	1.0	B319773
Sulphate (SO4)	mg/L	67	1.0	B320585				29	1.0	B319773

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Sample filtered and preserved past method specified hold time

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Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLB881			CLB881			CLB882		
Sampling Date		2024/03/15 14:31			2024/03/15 14:31			2024/03/16 12:15		
COC Number		299617			299617			299617		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B321246				<0.015	0.015	B321246
Orthophosphate (P)	mg/L	<0.0030	0.0030	B320498				<0.0030	0.0030	B320498
Nitrite (N)	mg/L	<0.010	0.010	B320671				<0.010	0.010	B320589
Nitrate plus Nitrite (N)	mg/L	0.38	0.010	B320671				0.19	0.010	B320589
Misc. Organics										
Total Oil and grease	mg/L	8.0	2.0	B316377				6.0	2.0	B316377
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B319599				<2.0	2.0	B319599
Physical Properties										
True Colour	PtCo units	6.7	2.0	B320461				<2.0	2.0	B320765
Physical Properties										
Turbidity	NTU	51	0.10	B319038				7.3	0.10	B319038

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CLB882		
Sampling Date		2024/03/16 12:15		
COC Number		299617		
	UNITS	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Lab Filtered Inorganics				
Dissolved Organic Carbon (C)	mg/L	2.3	0.50	B322454

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLB881	CLB882			CLB882		
Sampling Date		2024/03/15 14:31	2024/03/16 12:15			2024/03/16 12:15		
COC Number		299617	299617			299617		
	UNITS	**AEMP-DS-06**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B318896			
Acenaphthene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
Acridine	ug/L	<0.040	<0.040	0.040	B319712	<0.040	0.040	B319712
Anthracene	ug/L	<0.010	<0.010	0.010	B319712	<0.010	0.010	B319712
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B319712	<0.0075	0.0075	B319712
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B319712	<0.0075	0.0075	B319712
Fluoranthene	ug/L	<0.010	<0.010	0.010	B319712	<0.010	0.010	B319712
Fluorene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
Naphthalene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
Phenanthrene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
Perylene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
Pyrene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
Quinoline	ug/L	<0.20	<0.20	0.20	B319712	<0.20	0.20	B319712
Retene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
Biphenyl	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712

RDL = Reportable Detection Limit
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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLB881	CLB882			CLB882		
Sampling Date		2024/03/15 14:31	2024/03/16 12:15			2024/03/16 12:15		
COC Number		299617	299617			299617		
	UNITS	**AEMP-DS-06**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C1-fluorene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
C2-fluorene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
C3-fluorene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B319712	<0.050	0.050	B319712
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B319712	<0.020	0.020	B319712
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B319712	<0.0085	0.0085	B319712
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B319712	<0.0075	0.0075	B319712
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B319712	<0.0075	0.0075	B319712
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B319712	<0.10	0.10	B319712
Extraction Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	94	106		B319712	97		B319712
D8-ACENAPHTHYLENE (sur.)	%	82	94		B319712	85		B319712
D8-NAPHTHALENE (sur.)	%	79	93		B319712	83		B319712

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Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLB881	CLB882			CLB882		
Sampling Date		2024/03/15 14:31	2024/03/16 12:15			2024/03/16 12:15		
COC Number		299617	299617			299617		
	UNITS	**AEMP-DS-06**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
TERPHENYL-D14 (sur.)	%	108	120		B319712	109		B319712

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CLB881		
Sampling Date		2024/03/15 14:31		
COC Number		299617		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**
Elements				
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	B324609
Total Mercury (Hg)	ug/L	0.0042	0.0019	B328416
RDL = Reportable Detection Limit				

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CLB881			CLB882			CLB882		
Sampling Date		2024/03/15 14:31			2024/03/16 12:15			2024/03/16 12:15		
COC Number		299617			299617			299617		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Elements										
Dissolved Aluminum (Al)	mg/L	0.0052	0.0030	B322189						
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	B322189						
Dissolved Arsenic (As)	mg/L	<0.00020	0.00020	B322189						
Dissolved Barium (Ba)	mg/L	0.066	0.010	B322174						
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	B322189						
Dissolved Boron (B)	mg/L	<0.020	0.020	B322174						
Dissolved Calcium (Ca)	mg/L	56	0.30	B322174						
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	B322189						
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00030	B322189						
Dissolved Copper (Cu)	mg/L	0.0013	0.0010	B322189						
Dissolved Iron (Fe)	mg/L	<0.060	0.060	B322174						
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	B322189						
Dissolved Lithium (Li)	mg/L	<0.020	0.020	B322174						
Dissolved Magnesium (Mg)	mg/L	17	0.20	B322174						
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0040	B322174						
Dissolved Molybdenum (Mo)	mg/L	0.00086	0.00020	B322189						
Dissolved Nickel (Ni)	mg/L	0.0012	0.00050	B322189						
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	B322174						
Dissolved Potassium (K)	mg/L	1.3	0.30	B322174						
Dissolved Selenium (Se)	mg/L	0.00035	0.00020	B322189						
Dissolved Silicon (Si)	mg/L	2.2	0.50	B322174						
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	B322189						
Dissolved Sodium (Na)	mg/L	17	0.50	B322174						
Dissolved Strontium (Sr)	mg/L	0.37	0.020	B322174						
Dissolved Sulphur (S)	mg/L	24	0.20	B322174						
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	B322189						
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	B322189						
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	B322189						
Dissolved Uranium (U)	mg/L	0.00075	0.00010	B322189						
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	B322189						

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Bureau Veritas Job #: C419882
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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CLB881			CLB882			CLB882		
Sampling Date		2024/03/15 14:31			2024/03/16 12:15			2024/03/16 12:15		
COC Number		299617			299617			299617		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	B322189						
Lab Filtered Elements										
Dissolved Aluminum (Al)	mg/L				<0.0030	0.0030	B320621	<0.0030	0.0030	B320621
Dissolved Antimony (Sb)	mg/L				<0.00060	0.00060	B320621	<0.00060	0.00060	B320621
Dissolved Arsenic (As)	mg/L				0.00028	0.00020	B320621	0.00026	0.00020	B320621
Dissolved Barium (Ba)	mg/L				0.035	0.010	B320474			
Dissolved Beryllium (Be)	mg/L				<0.0010	0.0010	B320621	<0.0010	0.0010	B320621
Dissolved Boron (B)	mg/L				<0.020	0.020	B320474			
Dissolved Calcium (Ca)	mg/L				25	0.30	B320474			
Dissolved Chromium (Cr)	mg/L				<0.0010	0.0010	B320621	<0.0010	0.0010	B320621
Dissolved Cobalt (Co)	mg/L				<0.00030	0.00030	B320621	<0.00030	0.00030	B320621
Dissolved Copper (Cu)	mg/L				<0.0010	0.0010	B320621	<0.0010	0.0010	B320621
Dissolved Iron (Fe)	mg/L				<0.060	0.060	B320474			
Dissolved Lead (Pb)	mg/L				<0.00020	0.00020	B320621	0.00029	0.00020	B320621
Dissolved Lithium (Li)	mg/L				<0.020	0.020	B320474			
Dissolved Magnesium (Mg)	mg/L				9.5	0.20	B320474			
Dissolved Manganese (Mn)	mg/L				<0.0040	0.0040	B320474			
Dissolved Molybdenum (Mo)	mg/L				0.00052	0.00020	B320621	0.00055	0.00020	B320621
Dissolved Nickel (Ni)	mg/L				0.00061	0.00050	B320621	0.00061	0.00050	B320621
Dissolved Phosphorus (P)	mg/L				<0.10	0.10	B320474			
Dissolved Potassium (K)	mg/L				0.98	0.30	B320474			
Dissolved Selenium (Se)	mg/L				<0.00020	0.00020	B320621	<0.00020	0.00020	B320621
Dissolved Silicon (Si)	mg/L				1.5	0.50	B320474			
Dissolved Silver (Ag)	mg/L				<0.00010	0.00010	B320621	<0.00010	0.00010	B320621
Dissolved Sodium (Na)	mg/L				8.6	0.50	B320474			
Dissolved Strontium (Sr)	mg/L				0.18	0.020	B320474			
Dissolved Sulphur (S)	mg/L				8.3	0.20	B320474			
Dissolved Thallium (Tl)	mg/L				<0.00020	0.00020	B320621	<0.00020	0.00020	B320621
Dissolved Tin (Sn)	mg/L				<0.0010	0.0010	B320621	<0.0010	0.0010	B320621
Dissolved Titanium (Ti)	mg/L				<0.0010	0.0010	B320621	<0.0010	0.0010	B320621
Dissolved Uranium (U)	mg/L				0.00043	0.00010	B320621	0.00044	0.00010	B320621

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CLB881			CLB882			CLB882		
Sampling Date		2024/03/15 14:31			2024/03/16 12:15			2024/03/16 12:15		
COC Number		299617			299617			299617		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Dissolved Vanadium (V)	mg/L				<0.0010	0.0010	B320621	<0.0010	0.0010	B320621
Dissolved Zinc (Zn)	mg/L				<0.0030	0.0030	B320621	<0.0030	0.0030	B320621

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLB881
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/03/15
Relinquished: 2024/03/17
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B320733	N/A	2024/03/23	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B319967	N/A	2024/03/22	Wonjeong Park
F1-BTEX	CALC/MS	B318880	N/A	2024/03/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B318881	N/A	2024/03/26	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B318882	N/A	2024/03/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B320585	N/A	2024/03/22	Shanna McKort
COD by Colorimeter	M/PROB	B321696	N/A	2024/03/25	Amy Phan
True Colour	SPEC/COL	B320461	N/A	2024/03/22	Tyler Orr
Carbon (DOC)	TECH	B322076	N/A	2024/03/25	Ming Dong
Conductivity @25C	COND	B320738	N/A	2024/03/23	Ayesha Shakoor
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B319713	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B318885	N/A	2024/03/23	Automated Statchk
Hardness	CALC	B319652	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B324609	2024/03/27	2024/03/27	Kiran Kumari
Mercury (Total) by CV	CV	B328416	2024/04/02	2024/04/02	Meet Patel
Elements by ICP - Dissolved	ICPA	B322174	N/A	2024/03/25	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B321941	2024/03/25	2024/03/26	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B322189	N/A	2024/03/25	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B321936	2024/03/25	2024/03/25	Kristijan Kovac
Ion Balance	CALC	B319078	N/A	2024/03/26	Automated Statchk
Ammonia-N (Total)	KONE	B321246	N/A	2024/03/24	Isabelle White
Nitrate and Nitrite	CALC	B320630	N/A	2024/03/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B320671	N/A	2024/03/22	Isabelle White
Nitrate (as N)	CALC	B319178	2024/03/23	2024/03/23	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B316377	2024/03/22	2024/03/22	Junyan Ban
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B318896	N/A	2024/03/27	Automated Statchk
Orthophosphate by Automated Analyzer	KONE	B320498	N/A	2024/03/22	Mary Anne Dela Cruz
Total Sulphide	SPEC	B320666	N/A	2024/03/22	Irene Donita Villanueva
Total Dissolved Solids (Filt. Residue)	BAL	B320220	2024/03/22	2024/03/23	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B320627	N/A	2024/03/25	Automated Statchk
Nitrogen (Total)	AC/COL	B321574	2024/03/25	2024/03/25	Mary Anne Dela Cruz
Carbon (Total Organic)	TECH	B322450	N/A	2024/03/26	Ming Dong
Hydrocarbon by IR (Mineral oil & grease)	IR	B319599	2024/03/25	2024/03/26	Chuhan Huang
Total Suspended Solids (NFR)	BAL	B319927	2024/03/22	2024/03/22	Haydee Estilong
Turbidity	TURB	B319038	N/A	2024/03/21	Daryl Viktoria Noval

Bureau Veritas ID: CLB881 Dup
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/03/15
Relinquished: 2024/03/17
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Dissolved Solids (Filt. Residue)	BAL	B320220	2024/03/22	2024/03/23	Haydee Estilong

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Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLB882
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/03/16
Relinquished: 2024/03/17
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B320733	N/A	2024/03/23	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B319967	N/A	2024/03/22	Wonjeong Park
F1-BTEX	CALC/MS	B318880	N/A	2024/03/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B318881	N/A	2024/03/22	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B318882	N/A	2024/03/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B319773	N/A	2024/03/21	Tyler Orr
COD by Colorimeter	M/PROB	B321696	N/A	2024/03/25	Amy Phan
True Colour	SPEC/COL	B320765	N/A	2024/03/22	Tyler Orr
Carbon (DOC) -Lab Filtered	TECH	B322454	N/A	2024/03/26	Ming Dong
Conductivity @25C	COND	B320738	N/A	2024/03/23	Ayesha Shakoor
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B319713	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B318885	N/A	2024/03/23	Automated Statchk
Hardness	CALC	B319114	N/A	2024/03/22	Automated Statchk
Elements by ICP-Dissolved-Lab Filtered	ICPA	B320474	N/A	2024/03/22	Vincy Scaria
Elements by ICP - Total	ICPA	B321588	2024/03/25	2024/03/25	Hue Quyen Vuong
Elements by ICPMS-Dissolved-Lab Filtered	ICPM	B320621	N/A	2024/03/22	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B321585	2024/03/25	2024/03/25	Kevin Huang
Ion Balance	CALC	B319078	N/A	2024/03/23	Automated Statchk
Ammonia-N (Total)	KONE	B321246	N/A	2024/03/24	Isabelle White
Nitrate and Nitrite	CALC	B320630	N/A	2024/03/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B320589	N/A	2024/03/22	Isabelle White
Nitrate (as N)	CALC	B319178	2024/03/22	2024/03/22	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B316377	2024/03/22	2024/03/22	Junyan Ban
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B318896	N/A	2024/03/27	Automated Statchk
Orthophosphate by Automated Analyzer	KONE	B320498	N/A	2024/03/22	Mary Anne Dela Cruz
Total Sulphide	SPEC	B320666	N/A	2024/03/22	Irene Donita Villanueva
Total Dissolved Solids (Filt. Residue)	BAL	B320220	2024/03/22	2024/03/23	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B320627	N/A	2024/03/26	Automated Statchk
Nitrogen (Total)	AC/COL	B322720	2024/03/26	2024/03/26	Mary Anne Dela Cruz
Carbon (Total Organic)	TECH	B322462	N/A	2024/03/26	Ming Dong
Hydrocarbon by IR (Mineral oil & grease)	IR	B319599	2024/03/25	2024/03/26	Chuhan Huang
Total Suspended Solids (NFR)	BAL	B319927	2024/03/22	2024/03/22	Haydee Estilong
Turbidity	TURB	B319038	N/A	2024/03/21	Daryl Viktoria Noval

Bureau Veritas ID: CLB882 Dup
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/03/16
Relinquished: 2024/03/17
Received: 2024/03/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbon (DOC) -Lab Filtered	TECH	B322454	N/A	2024/03/26	Ming Dong
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B319713	2024/03/24	2024/03/24	Bryanna Quach
Elements by ICPMS-Dissolved-Lab Filtered	ICPM	B320621	N/A	2024/03/22	Kristijan Kovac
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen

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GENERAL COMMENTS

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

Package 1	3.0°C

Note: Labelling issue (label missing and /or incorrect)
Chain of custody states that the samples for AEMP-US 01 is field-filtered and preserved.
However received containers did not have any markings on them that denotes anything. Proceeding with analysis.
Proceeding; notified Alex Haigh via email and confirmation report.

Sample CLB881 [AEMP-DS-06] : Sample was analyzed past method specified hold time for Turbidity. 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 True Colour. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CLB882 [AEMP-US-01] : Sample was analyzed past method specified hold time for Turbidity. 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 NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour.

Results relate only to the items tested.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B316377	JB9	Method Blank	Total Oil and grease	2024/03/22	<2.0		mg/L	
B319038	DVN	Method Blank	Turbidity	2024/03/21	<0.10		NTU	
B319599	CHA	Method Blank	Total Petroleum Hydrocarbon	2024/03/26	<2.0		mg/L	
B319712	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/03/24		102	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		116	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		83	%	50 - 130
			Acenaphthene	2024/03/24	<0.10		ug/L	
			Acenaphthylene	2024/03/24	<0.10		ug/L	
			Acridine	2024/03/24	<0.040		ug/L	
			Anthracene	2024/03/24	<0.010		ug/L	
			Benzo(a)anthracene	2024/03/24	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/03/24	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/03/24	<0.050		ug/L	
			Benzo(a)pyrene	2024/03/24	<0.0075		ug/L	
			Benzo(e)pyrene	2024/03/24	<0.050		ug/L	
			Chrysene	2024/03/24	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/03/24	<0.0075		ug/L	
			Fluoranthene	2024/03/24	<0.010		ug/L	
			Fluorene	2024/03/24	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/03/24	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/03/24	<0.0085		ug/L	
			2-Methylnaphthalene	2024/03/24	<0.10		ug/L	
			Naphthalene	2024/03/24	<0.10		ug/L	
			Phenanthrene	2024/03/24	<0.050		ug/L	
			Perylene	2024/03/24	<0.050		ug/L	
			Pyrene	2024/03/24	<0.020		ug/L	
			Quinoline	2024/03/24	<0.20		ug/L	
			Retene	2024/03/24	<0.050		ug/L	
			C1-Naphthalene	2024/03/24	<0.10		ug/L	
			C3-Naphthalene	2024/03/24	<0.10		ug/L	
			C4-Naphthalene	2024/03/24	<0.10		ug/L	
			C2-Naphthalene	2024/03/24	<0.10		ug/L	
			Biphenyl	2024/03/24	<0.020		ug/L	
			C1-biphenyl	2024/03/24	<0.020		ug/L	
			C2-biphenyl	2024/03/24	<0.020		ug/L	
			C1-fluorene	2024/03/24	<0.050		ug/L	
			C2-fluorene	2024/03/24	<0.050		ug/L	
			C3-fluorene	2024/03/24	<0.050		ug/L	
			Dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C2-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C3-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C4-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C3 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C1-Acenaphthene	2024/03/24	<0.10		ug/L	
			1-Methylnaphthalene	2024/03/24	<0.10		ug/L	
B319713	BQU	Method Blank	O-TERPHENYL (sur.)	2024/03/24		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24	<0.10		mg/L	
B319773	TOR	Method Blank	Chloride (Cl)	2024/03/21	<1.0		mg/L	
			Sulphate (SO4)	2024/03/21	<1.0		mg/L	
B319927	HE1	Method Blank	Total Suspended Solids	2024/03/22	<1.0		mg/L	
B319967	WPK	Method Blank	1,4-Difluorobenzene (sur.)	2024/03/22		105	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/22		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/22		91	%	50 - 140
			Benzene	2024/03/22	<0.00040		mg/L	
			Toluene	2024/03/22	<0.00040		mg/L	
			Ethylbenzene	2024/03/22	<0.00040		mg/L	
			m & p-Xylene	2024/03/22	<0.00080		mg/L	
			o-Xylene	2024/03/22	<0.00040		mg/L	
			F1 (C6-C10)	2024/03/22	<0.10		mg/L	
B320220	HE1	Method Blank	Total Dissolved Solids	2024/03/23	<10		mg/L	
B320461	TOR	Method Blank	True Colour	2024/03/22	<2.0		PtCo units	
B320474	VSC	Method Blank	Dissolved Iron (Fe)	2024/03/22	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/03/22	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/03/22	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/03/22	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/03/22	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/03/22	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/03/22	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/03/22	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/03/22	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/03/22	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/03/22	<0.50		mg/L	
			Dissolved Boron (B)	2024/03/22	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/03/22	<0.30		mg/L	
B320498	MAP	Method Blank	Orthophosphate (P)	2024/03/22	<0.0030		mg/L	
B320585	SKM	Method Blank	Chloride (Cl)	2024/03/22	<1.0		mg/L	
			Sulphate (SO4)	2024/03/22	<1.0		mg/L	
B320589	ISW	Method Blank	Nitrite (N)	2024/03/22	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/03/22	<0.010		mg/L	
B320621	KKC	Method Blank	Dissolved Aluminum (Al)	2024/03/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/03/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/03/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/03/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/03/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/03/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/03/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/03/22	<0.00050		mg/L	

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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)	2024/03/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/03/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/03/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/03/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/03/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/03/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/03/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/03/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/03/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/03/22	<0.0010		mg/L	
B320666	IDV	Method Blank	Total Sulphide	2024/03/22	<0.0018		mg/L	
B320671	ISW	Method Blank	Nitrite (N)	2024/03/22	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/03/22	<0.010		mg/L	
B320733	A5S	Method Blank	Alkalinity (Total as CaCO3)	2024/03/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/03/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/03/23	<1.0		mg/L	
			Carbonate (CO3)	2024/03/23	<1.0		mg/L	
			Hydroxide (OH)	2024/03/23	<1.0		mg/L	
B320738	A5S	Method Blank	Conductivity	2024/03/23	<2.0		uS/cm	
B320765	TOR	Method Blank	True Colour	2024/03/22	<2.0		PtCo units	
B321246	ISW	Method Blank	Total Ammonia (N)	2024/03/24	<0.015		mg/L	
B321574	MAP	Method Blank	Total Nitrogen (N)	2024/03/25	<0.020		mg/L	
B321585	KH2	Method Blank	Total Aluminum (Al)	2024/03/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/03/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/03/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/03/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/03/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/03/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/03/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/03/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/03/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/03/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/03/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/03/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/03/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/03/25	<0.0010		mg/L	
			Total Uranium (U)	2024/03/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/03/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/03/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/03/25	<0.0010		mg/L	
B321588	HQV	Method Blank	Total Iron (Fe)	2024/03/25	<0.060		mg/L	
			Total Lithium (Li)	2024/03/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/03/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/03/25	<0.0040		mg/L	
			Total Potassium (K)	2024/03/25	<0.30		mg/L	
			Total Sodium (Na)	2024/03/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/03/25	<0.020		mg/L	
			Total Sulphur (S)	2024/03/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/03/25	<0.10		mg/L	
			Total Barium (Ba)	2024/03/25	<0.010		mg/L	
			Total Silicon (Si)	2024/03/25	<0.50		mg/L	
			Total Boron (B)	2024/03/25	<0.020		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Calcium (Ca)	2024/03/25	<0.30		mg/L	
B321696	AP1	Method Blank	Chemical Oxygen Demand	2024/03/25	<10		mg/L	
B321936	KKC	Method Blank	Total Aluminum (Al)	2024/03/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/03/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/03/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/03/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/03/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/03/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/03/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/03/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/03/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/03/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/03/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/03/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/03/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/03/25	<0.0010		mg/L	
			Total Uranium (U)	2024/03/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/03/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/03/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/03/25	<0.0010		mg/L	
B321941	VSC	Method Blank	Total Iron (Fe)	2024/03/26	<0.060		mg/L	
			Total Lithium (Li)	2024/03/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/03/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/03/26	<0.0040		mg/L	
			Total Potassium (K)	2024/03/26	<0.30		mg/L	
			Total Sodium (Na)	2024/03/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/03/26	<0.020		mg/L	
			Total Sulphur (S)	2024/03/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/03/26	<0.10		mg/L	
			Total Barium (Ba)	2024/03/26	<0.010		mg/L	
			Total Silicon (Si)	2024/03/26	<0.50		mg/L	
			Total Boron (B)	2024/03/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/03/26	<0.30		mg/L	
B322076	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/03/25	<0.50		mg/L	
B322174	HQV	Method Blank	Dissolved Iron (Fe)	2024/03/25	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/03/25	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/03/25	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/03/25	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/03/25	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/03/25	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/03/25	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/03/25	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/03/25	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/03/25	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/03/25	<0.50		mg/L	
			Dissolved Boron (B)	2024/03/25	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/03/25	<0.30		mg/L	
B322189	KKC	Method Blank	Dissolved Aluminum (Al)	2024/03/25	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/03/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/03/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/03/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/03/25	<0.00020		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Antimony (Sb)	2024/03/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/03/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/03/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/03/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/03/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/03/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/03/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/03/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/03/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/03/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/03/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/03/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/03/25	<0.0010		mg/L	
B322450	MDO	Method Blank	Total Organic Carbon (C)	2024/03/26	<0.50		mg/L	
B322454	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/03/26	<0.50		mg/L	
B322462	MDO	Method Blank	Total Organic Carbon (C)	2024/03/26	<0.50		mg/L	
B322720	MAP	Method Blank	Total Nitrogen (N)	2024/03/26	<0.020		mg/L	
B324609	KKM	Method Blank	Dissolved Mercury (Hg)	2024/03/27	<0.0019		ug/L	
B328416	MPK	Method Blank	Total Mercury (Hg)	2024/04/02	<0.0019		ug/L	
B320220	HE1	RPD [CLB881-01]	Total Dissolved Solids	2024/03/23	1.4		%	20
B319712	JC7	RPD [CLB882-03]	Acenaphthene	2024/03/24	NC		%	30
			Acenaphthylene	2024/03/24	NC		%	30
			Acridine	2024/03/24	NC		%	30
			Anthracene	2024/03/24	NC		%	30
			Benzo(a)anthracene	2024/03/24	NC		%	30
			Benzo(b&j)fluoranthene	2024/03/24	NC		%	30
			Benzo(k)fluoranthene	2024/03/24	NC		%	30
			Benzo(g,h,i)perylene	2024/03/24	NC		%	30
			Benzo(c)phenanthrene	2024/03/24	NC		%	30
			Benzo(a)pyrene	2024/03/24	NC		%	30
			Benzo(e)pyrene	2024/03/24	NC		%	30
			Chrysene	2024/03/24	NC		%	30
			Dibenz(a,h)anthracene	2024/03/24	NC		%	30
			Fluoranthene	2024/03/24	NC		%	30
			Fluorene	2024/03/24	NC		%	30
			Indeno(1,2,3-cd)pyrene	2024/03/24	NC		%	30
			Indeno(1,2,3-cd)fluoranthene	2024/03/24	NC		%	30
			2-Methylnaphthalene	2024/03/24	NC		%	30
			Naphthalene	2024/03/24	NC		%	30
			Phenanthrene	2024/03/24	NC		%	30
			Perylene	2024/03/24	NC		%	30
			Pyrene	2024/03/24	NC		%	30
			Quinoline	2024/03/24	NC		%	30
			Retene	2024/03/24	NC		%	30
			C1-Naphthalene	2024/03/24	NC		%	30
			C3-Naphthalene	2024/03/24	NC		%	30
			C4-Naphthalene	2024/03/24	NC		%	30
			C2-Naphthalene	2024/03/24	NC		%	30
			Biphenyl	2024/03/24	NC		%	30
			C1-biphenyl	2024/03/24	NC		%	30
			C2-biphenyl	2024/03/24	NC		%	30
			C1-fluorene	2024/03/24	NC		%	30

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			C2-fluorene	2024/03/24	NC		%	30
			C3-fluorene	2024/03/24	NC		%	30
			Dibenzothiophene	2024/03/24	NC		%	30
			C1-dibenzothiophene	2024/03/24	NC		%	30
			C2-dibenzothiophene	2024/03/24	NC		%	30
			C3-dibenzothiophene	2024/03/24	NC		%	30
			C4-dibenzothiophene	2024/03/24	NC		%	30
			C1 phenanthrene/anthracene	2024/03/24	NC		%	30
			C2 phenanthrene/anthracene	2024/03/24	NC		%	30
			C3 phenanthrene/anthracene	2024/03/24	NC		%	30
			C4 phenanthrene/anthracene	2024/03/24	NC		%	30
			C1 fluoranthene/pyrene	2024/03/24	NC		%	30
			C2 fluoranthene/pyrene	2024/03/24	NC		%	30
			C3 fluoranthene/pyrene	2024/03/24	NC		%	30
			C4 fluoranthene/pyrene	2024/03/24	NC		%	30
			C1 benzo(a)anthracene/chrysene	2024/03/24	NC		%	30
			C2 benzo(a)anthracene/chrysene	2024/03/24	NC		%	30
			C3 benzo(a)anthracene/chrysene	2024/03/24	NC		%	30
			C4 benzo(a)anthracene/chrysene	2024/03/24	NC		%	30
			C1benzobjkfluoranthene/benzoapyrene	2024/03/24	NC		%	30
			C2benzobjkfluoranthene/benzoapyrene	2024/03/24	NC		%	30
			C1-Acenaphthene	2024/03/24	NC		%	30
			1-Methylnaphthalene	2024/03/24	NC		%	30
B319713	BQU	RPD [CLB882-05]	F2 (C10-C16 Hydrocarbons)	2024/03/24	NC		%	30
B320621	KKC	RPD [CLB882-02]	Dissolved Aluminum (Al)	2024/03/22	NC		%	20
			Dissolved Chromium (Cr)	2024/03/22	NC		%	20
			Dissolved Cobalt (Co)	2024/03/22	NC		%	20
			Dissolved Copper (Cu)	2024/03/22	NC		%	20
			Dissolved Lead (Pb)	2024/03/22	NC		%	20
			Dissolved Antimony (Sb)	2024/03/22	NC		%	20
			Dissolved Molybdenum (Mo)	2024/03/22	5.8		%	20
			Dissolved Nickel (Ni)	2024/03/22	0.38		%	20
			Dissolved Selenium (Se)	2024/03/22	NC		%	20
			Dissolved Silver (Ag)	2024/03/22	NC		%	20
			Dissolved Arsenic (As)	2024/03/22	9.6		%	20
			Dissolved Thallium (Tl)	2024/03/22	NC		%	20
			Dissolved Tin (Sn)	2024/03/22	NC		%	20
			Dissolved Titanium (Ti)	2024/03/22	NC		%	20
			Dissolved Uranium (U)	2024/03/22	2.4		%	20
			Dissolved Vanadium (V)	2024/03/22	NC		%	20
			Dissolved Zinc (Zn)	2024/03/22	NC		%	20
			Dissolved Beryllium (Be)	2024/03/22	NC		%	20
B322454	MDO	RPD [CLB882-02]	Dissolved Organic Carbon (C)	2024/03/26	1.6		%	20
B319713	BQU	Matrix Spike [CLB881-05]	O-TERPHENYL (sur.)	2024/03/24		96	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24		95	%	60 - 140
B320220	HE1	Matrix Spike [CLB881-01]	Total Dissolved Solids	2024/03/23		98	%	80 - 120
B320621	KKC	Matrix Spike [CLB882-02]	Dissolved Aluminum (Al)	2024/03/22		100	%	80 - 120
			Dissolved Chromium (Cr)	2024/03/22		98	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/22		98	%	80 - 120
			Dissolved Copper (Cu)	2024/03/22		101	%	80 - 120
			Dissolved Lead (Pb)	2024/03/22		98	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/22		103	%	80 - 120

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			Dissolved Molybdenum (Mo)	2024/03/22		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/22		98	%	80 - 120
			Dissolved Selenium (Se)	2024/03/22		104	%	80 - 120
			Dissolved Silver (Ag)	2024/03/22		98	%	80 - 120
			Dissolved Arsenic (As)	2024/03/22		100	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/22		97	%	80 - 120
			Dissolved Tin (Sn)	2024/03/22		99	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/22		98	%	80 - 120
			Dissolved Uranium (U)	2024/03/22		97	%	80 - 120
			Dissolved Vanadium (V)	2024/03/22		99	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/22		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/22		94	%	80 - 120
B322454	MDO	Matrix Spike [CLB882-02]	Dissolved Organic Carbon (C)	2024/03/26		88	%	80 - 120
B316377	JB9	LCS	Total Oil and grease	2024/03/22		105	%	70 - 130
B319038	DVN	LCS	Turbidity	2024/03/21		99	%	80 - 120
B319599	CHA	LCS	Total Petroleum Hydrocarbon	2024/03/26		90	%	70 - 130
B319712	JC7	LCS	D10-ANTHRACENE (sur.)	2024/03/24		105	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		123	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		78	%	50 - 130
			Acenaphthene	2024/03/24		102	%	50 - 130
			Acenaphthylene	2024/03/24		100	%	50 - 130
			Acridine	2024/03/24		80	%	50 - 130
			Anthracene	2024/03/24		84	%	50 - 130
			Benzo(a)anthracene	2024/03/24		104	%	50 - 130
			Benzo(b&j)fluoranthene	2024/03/24		111	%	50 - 130
			Benzo(k)fluoranthene	2024/03/24		119	%	50 - 130
			Benzo(g,h,i)perylene	2024/03/24		109	%	50 - 130
			Benzo(c)phenanthrene	2024/03/24		114	%	50 - 130
			Benzo(a)pyrene	2024/03/24		108	%	50 - 130
			Benzo(e)pyrene	2024/03/24		99	%	50 - 130
			Chrysene	2024/03/24		112	%	50 - 130
			Dibenz(a,h)anthracene	2024/03/24		118	%	50 - 130
			Fluoranthene	2024/03/24		111	%	50 - 130
			Fluorene	2024/03/24		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/03/24		108	%	50 - 130
			2-Methylnaphthalene	2024/03/24		96	%	50 - 130
			Naphthalene	2024/03/24		102	%	50 - 130
			Phenanthrene	2024/03/24		118	%	50 - 130
			Perylene	2024/03/24		103	%	50 - 130
			Pyrene	2024/03/24		114	%	50 - 130
			Quinoline	2024/03/24		104	%	50 - 130
			C1-Naphthalene	2024/03/24		85	%	50 - 130
			C3-Naphthalene	2024/03/24		101	%	50 - 130
			C2-Naphthalene	2024/03/24		100	%	50 - 130
			C1-biphenyl	2024/03/24		99	%	50 - 130
			C1 phenanthrene/anthracene	2024/03/24		114	%	50 - 130
			C2 phenanthrene/anthracene	2024/03/24		110	%	50 - 130
			C1 fluoranthene/pyrene	2024/03/24		107	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/03/24		88	%	30 - 130
			1-Methylnaphthalene	2024/03/24		85	%	50 - 130
B319713	BQU	LCS	O-TERPHENYL (sur.)	2024/03/24		99	%	60 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F2 (C10-C16 Hydrocarbons)	2024/03/24		98	%	60 - 140
B319773	TOR	LCS	Chloride (Cl)	2024/03/21		95	%	80 - 120
			Sulphate (SO4)	2024/03/21		103	%	80 - 120
B319927	HE1	LCS	Total Suspended Solids	2024/03/22		94	%	80 - 120
B319967	WPK	LCS	1,4-Difluorobenzene (sur.)	2024/03/22		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/22		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/22		83	%	50 - 140
			Benzene	2024/03/22		90	%	60 - 130
			Toluene	2024/03/22		94	%	60 - 130
			Ethylbenzene	2024/03/22		101	%	60 - 130
			m & p-Xylene	2024/03/22		101	%	60 - 130
			o-Xylene	2024/03/22		102	%	60 - 130
			F1 (C6-C10)	2024/03/22		107	%	60 - 140
B320220	HE1	LCS	Total Dissolved Solids	2024/03/23		98	%	80 - 120
B320461	TOR	LCS	True Colour	2024/03/22		102	%	80 - 120
B320474	VSC	LCS	Dissolved Iron (Fe)	2024/03/22		104	%	80 - 120
			Dissolved Lithium (Li)	2024/03/22		101	%	80 - 120
			Dissolved Magnesium (Mg)	2024/03/22		109	%	80 - 120
			Dissolved Manganese (Mn)	2024/03/22		104	%	80 - 120
			Dissolved Potassium (K)	2024/03/22		106	%	80 - 120
			Dissolved Sodium (Na)	2024/03/22		104	%	80 - 120
			Dissolved Strontium (Sr)	2024/03/22		98	%	80 - 120
			Dissolved Sulphur (S)	2024/03/22		104	%	80 - 120
			Dissolved Phosphorus (P)	2024/03/22		100	%	80 - 120
			Dissolved Barium (Ba)	2024/03/22		100	%	80 - 120
			Dissolved Silicon (Si)	2024/03/22		102	%	80 - 120
			Dissolved Boron (B)	2024/03/22		100	%	80 - 120
			Dissolved Calcium (Ca)	2024/03/22		103	%	80 - 120
B320498	MAP	LCS	Orthophosphate (P)	2024/03/22		101	%	80 - 120
B320585	SKM	LCS	Chloride (Cl)	2024/03/22		95	%	80 - 120
			Sulphate (SO4)	2024/03/22		90	%	80 - 120
B320589	ISW	LCS	Nitrite (N)	2024/03/22		93	%	80 - 120
			Nitrate plus Nitrite (N)	2024/03/22		104	%	80 - 120
B320621	KKC	LCS	Dissolved Aluminum (Al)	2024/03/22		104	%	80 - 120
			Dissolved Chromium (Cr)	2024/03/22		99	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/22		99	%	80 - 120
			Dissolved Copper (Cu)	2024/03/22		101	%	80 - 120
			Dissolved Lead (Pb)	2024/03/22		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/22		104	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/03/22		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/22		101	%	80 - 120
			Dissolved Selenium (Se)	2024/03/22		101	%	80 - 120
			Dissolved Silver (Ag)	2024/03/22		99	%	80 - 120
			Dissolved Arsenic (As)	2024/03/22		99	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/22		99	%	80 - 120
			Dissolved Tin (Sn)	2024/03/22		99	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/22		101	%	80 - 120
			Dissolved Uranium (U)	2024/03/22		96	%	80 - 120
			Dissolved Vanadium (V)	2024/03/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/22		104	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/22		93	%	80 - 120
B320666	IDV	LCS	Total Sulphide	2024/03/22		95	%	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
B320671	ISW	LCS	Nitrite (N)	2024/03/22		98	%	80 - 120
			Nitrate plus Nitrite (N)	2024/03/22		105	%	80 - 120
B320733	A5S	LCS	Alkalinity (Total as CaCO3)	2024/03/23		99	%	80 - 120
B320738	A5S	LCS	Conductivity	2024/03/23		101	%	90 - 110
B320765	TOR	LCS	True Colour	2024/03/22		97	%	80 - 120
B321246	ISW	LCS	Total Ammonia (N)	2024/03/24		104	%	80 - 120
B321574	MAP	LCS	Total Nitrogen (N)	2024/03/25		107	%	80 - 120
B321585	KH2	LCS	Total Aluminum (Al)	2024/03/25		101	%	80 - 120
			Total Chromium (Cr)	2024/03/25		105	%	80 - 120
			Total Cobalt (Co)	2024/03/25		104	%	80 - 120
			Total Copper (Cu)	2024/03/25		104	%	80 - 120
			Total Lead (Pb)	2024/03/25		102	%	80 - 120
			Total Antimony (Sb)	2024/03/25		114	%	80 - 120
			Total Molybdenum (Mo)	2024/03/25		104	%	80 - 120
			Total Nickel (Ni)	2024/03/25		103	%	80 - 120
			Total Selenium (Se)	2024/03/25		105	%	80 - 120
			Total Silver (Ag)	2024/03/25		103	%	80 - 120
			Total Arsenic (As)	2024/03/25		104	%	80 - 120
			Total Thallium (Tl)	2024/03/25		104	%	80 - 120
			Total Tin (Sn)	2024/03/25		102	%	80 - 120
			Total Titanium (Ti)	2024/03/25		102	%	80 - 120
			Total Uranium (U)	2024/03/25		106	%	80 - 120
			Total Vanadium (V)	2024/03/25		104	%	80 - 120
			Total Zinc (Zn)	2024/03/25		101	%	80 - 120
			Total Beryllium (Be)	2024/03/25		99	%	80 - 120
B321588	HQV	LCS	Total Iron (Fe)	2024/03/25		111	%	80 - 120
			Total Lithium (Li)	2024/03/25		100	%	80 - 120
			Total Magnesium (Mg)	2024/03/25		104	%	80 - 120
			Total Manganese (Mn)	2024/03/25		110	%	80 - 120
			Total Potassium (K)	2024/03/25		102	%	80 - 120
			Total Sodium (Na)	2024/03/25		103	%	80 - 120
			Total Strontium (Sr)	2024/03/25		101	%	80 - 120
			Total Sulphur (S)	2024/03/25		102	%	80 - 120
			Total Phosphorus (P)	2024/03/25		102	%	80 - 120
			Total Barium (Ba)	2024/03/25		102	%	80 - 120
			Total Silicon (Si)	2024/03/25		110	%	80 - 120
			Total Boron (B)	2024/03/25		101	%	80 - 120
			Total Calcium (Ca)	2024/03/25		102	%	80 - 120
B321696	AP1	LCS	Chemical Oxygen Demand	2024/03/25		101	%	80 - 120
B321936	KKC	LCS	Total Aluminum (Al)	2024/03/25		96	%	80 - 120
			Total Chromium (Cr)	2024/03/25		98	%	80 - 120
			Total Cobalt (Co)	2024/03/25		97	%	80 - 120
			Total Copper (Cu)	2024/03/25		97	%	80 - 120
			Total Lead (Pb)	2024/03/25		97	%	80 - 120
			Total Antimony (Sb)	2024/03/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/03/25		97	%	80 - 120
			Total Nickel (Ni)	2024/03/25		96	%	80 - 120
			Total Selenium (Se)	2024/03/25		102	%	80 - 120
			Total Silver (Ag)	2024/03/25		96	%	80 - 120
			Total Arsenic (As)	2024/03/25		97	%	80 - 120
			Total Thallium (Tl)	2024/03/25		100	%	80 - 120
			Total Tin (Sn)	2024/03/25		94	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Titanium (Ti)	2024/03/25		98	%	80 - 120
			Total Uranium (U)	2024/03/25		99	%	80 - 120
			Total Vanadium (V)	2024/03/25		96	%	80 - 120
			Total Zinc (Zn)	2024/03/25		96	%	80 - 120
			Total Beryllium (Be)	2024/03/25		94	%	80 - 120
B321941	VSC	LCS	Total Iron (Fe)	2024/03/26		107	%	80 - 120
			Total Lithium (Li)	2024/03/26		104	%	80 - 120
			Total Magnesium (Mg)	2024/03/26		102	%	80 - 120
			Total Manganese (Mn)	2024/03/26		108	%	80 - 120
			Total Potassium (K)	2024/03/26		103	%	80 - 120
			Total Sodium (Na)	2024/03/26		103	%	80 - 120
			Total Strontium (Sr)	2024/03/26		103	%	80 - 120
			Total Sulphur (S)	2024/03/26		100	%	80 - 120
			Total Phosphorus (P)	2024/03/26		101	%	80 - 120
			Total Barium (Ba)	2024/03/26		106	%	80 - 120
			Total Silicon (Si)	2024/03/26		105	%	80 - 120
			Total Boron (B)	2024/03/26		110	%	80 - 120
			Total Calcium (Ca)	2024/03/26		102	%	80 - 120
B322076	MDO	LCS	Dissolved Organic Carbon (C)	2024/03/25		97	%	80 - 120
B322174	HQV	LCS	Dissolved Iron (Fe)	2024/03/25		101	%	80 - 120
			Dissolved Lithium (Li)	2024/03/25		93	%	80 - 120
			Dissolved Magnesium (Mg)	2024/03/25		94	%	80 - 120
			Dissolved Manganese (Mn)	2024/03/25		99	%	80 - 120
			Dissolved Potassium (K)	2024/03/25		98	%	80 - 120
			Dissolved Sodium (Na)	2024/03/25		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/03/25		95	%	80 - 120
			Dissolved Sulphur (S)	2024/03/25		94	%	80 - 120
			Dissolved Phosphorus (P)	2024/03/25		93	%	80 - 120
			Dissolved Barium (Ba)	2024/03/25		96	%	80 - 120
			Dissolved Silicon (Si)	2024/03/25		94	%	80 - 120
			Dissolved Boron (B)	2024/03/25		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/03/25		93	%	80 - 120
B322189	KKC	LCS	Dissolved Aluminum (Al)	2024/03/25		106	%	80 - 120
			Dissolved Chromium (Cr)	2024/03/25		108	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/25		109	%	80 - 120
			Dissolved Copper (Cu)	2024/03/25		111	%	80 - 120
			Dissolved Lead (Pb)	2024/03/25		105	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/25		115	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/03/25		107	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/25		107	%	80 - 120
			Dissolved Selenium (Se)	2024/03/25		115	%	80 - 120
			Dissolved Silver (Ag)	2024/03/25		105	%	80 - 120
			Dissolved Arsenic (As)	2024/03/25		107	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/25		106	%	80 - 120
			Dissolved Tin (Sn)	2024/03/25		105	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/25		109	%	80 - 120
			Dissolved Uranium (U)	2024/03/25		105	%	80 - 120
			Dissolved Vanadium (V)	2024/03/25		106	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/25		110	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/25		104	%	80 - 120
B322450	MDO	LCS	Total Organic Carbon (C)	2024/03/26		97	%	80 - 120
B322454	MDO	LCS	Dissolved Organic Carbon (C)	2024/03/26		105	%	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
B322462	MDO	LCS	Total Organic Carbon (C)	2024/03/26		100	%	80 - 120
B322720	MAP	LCS	Total Nitrogen (N)	2024/03/26		105	%	80 - 120
B324609	KKM	LCS	Dissolved Mercury (Hg)	2024/03/27		101	%	80 - 120
B328416	MPK	LCS	Total Mercury (Hg)	2024/04/02		86	%	80 - 120
B321574	MAP	SRM	Total Nitrogen (N)	2024/03/25		106	%	80 - 120
B322720	MAP	SRM	Total Nitrogen (N)	2024/03/26		105	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

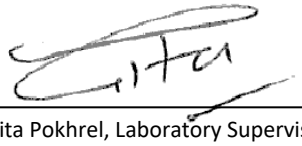
Bureau Veritas Job #: C419882
Report Date: 2024/04/04

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

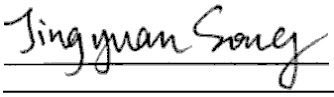
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Gita Pokhrel, Laboratory Supervisor



Jingyuan Song, QP, Organics – Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Automated Statchk

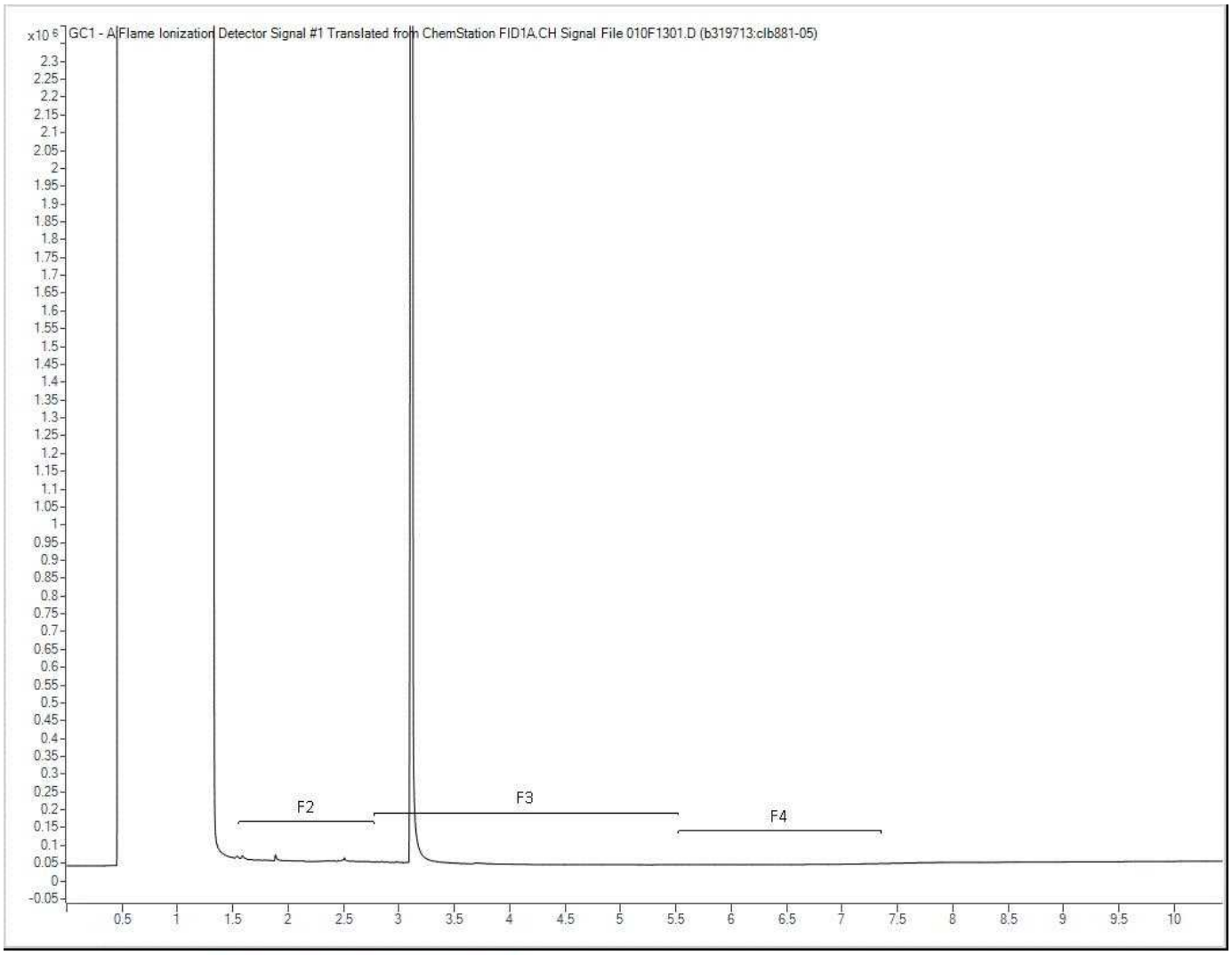
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

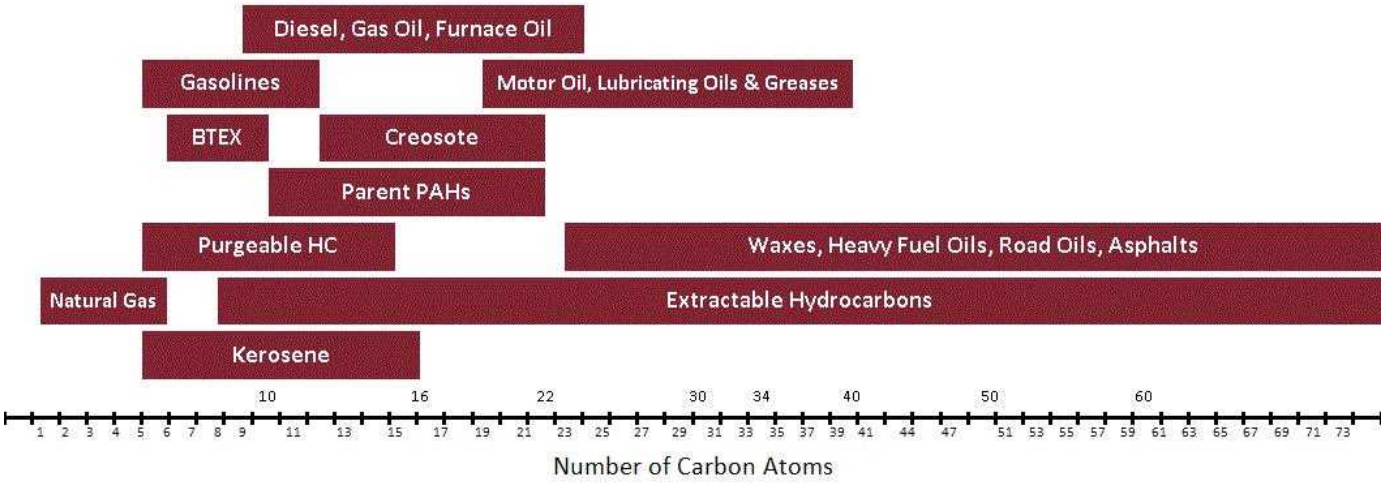
Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C419882
Report Date: 2024/04/04
Bureau Veritas Sample: CLB881

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DS-06

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





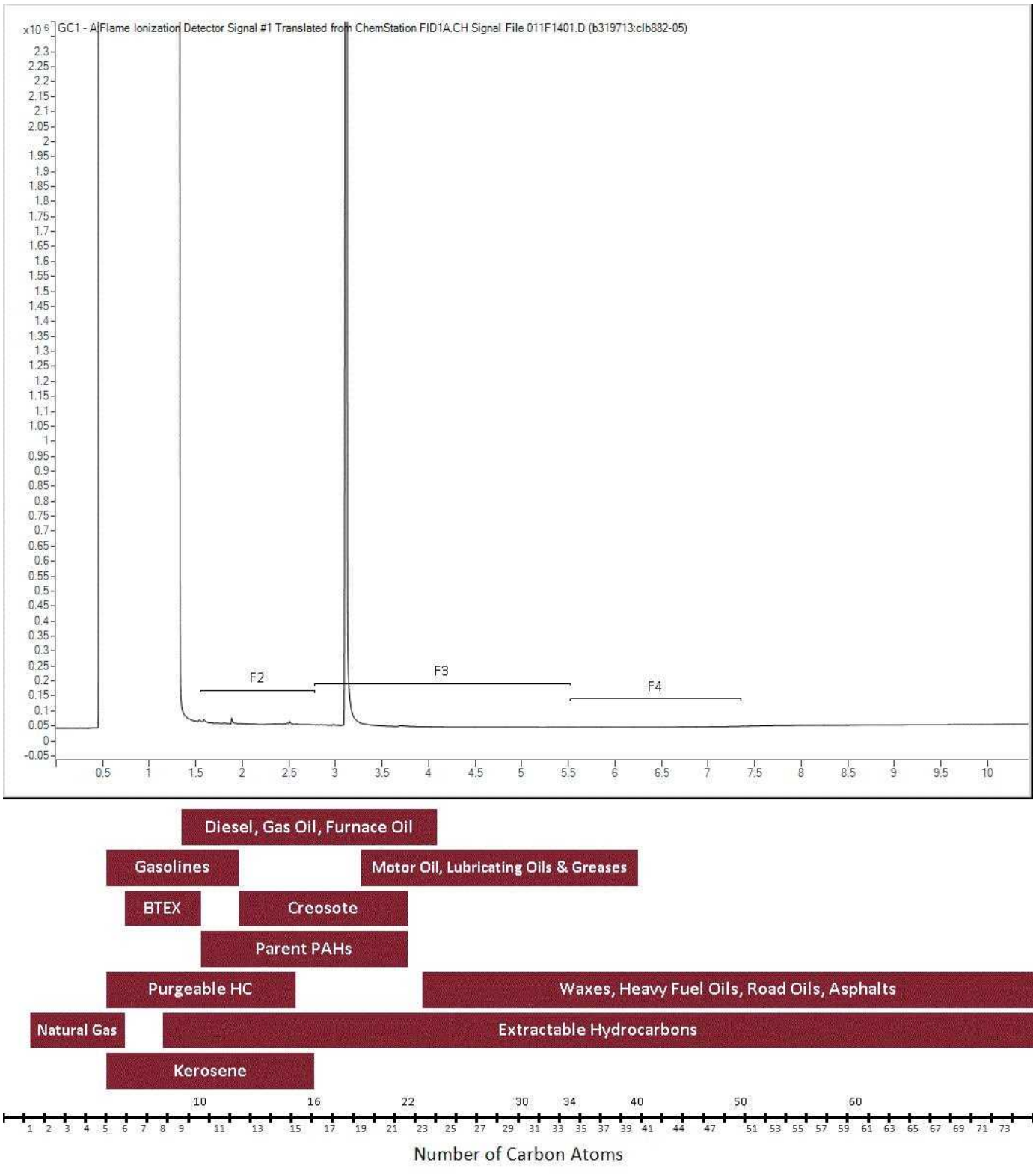
hpchem13\HPchem\1\DATA\2024\03\RUN0324

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

Bureau Veritas Job #: C419882
Report Date: 2024/04/04
Bureau Veritas Sample: CLB882

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-US-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



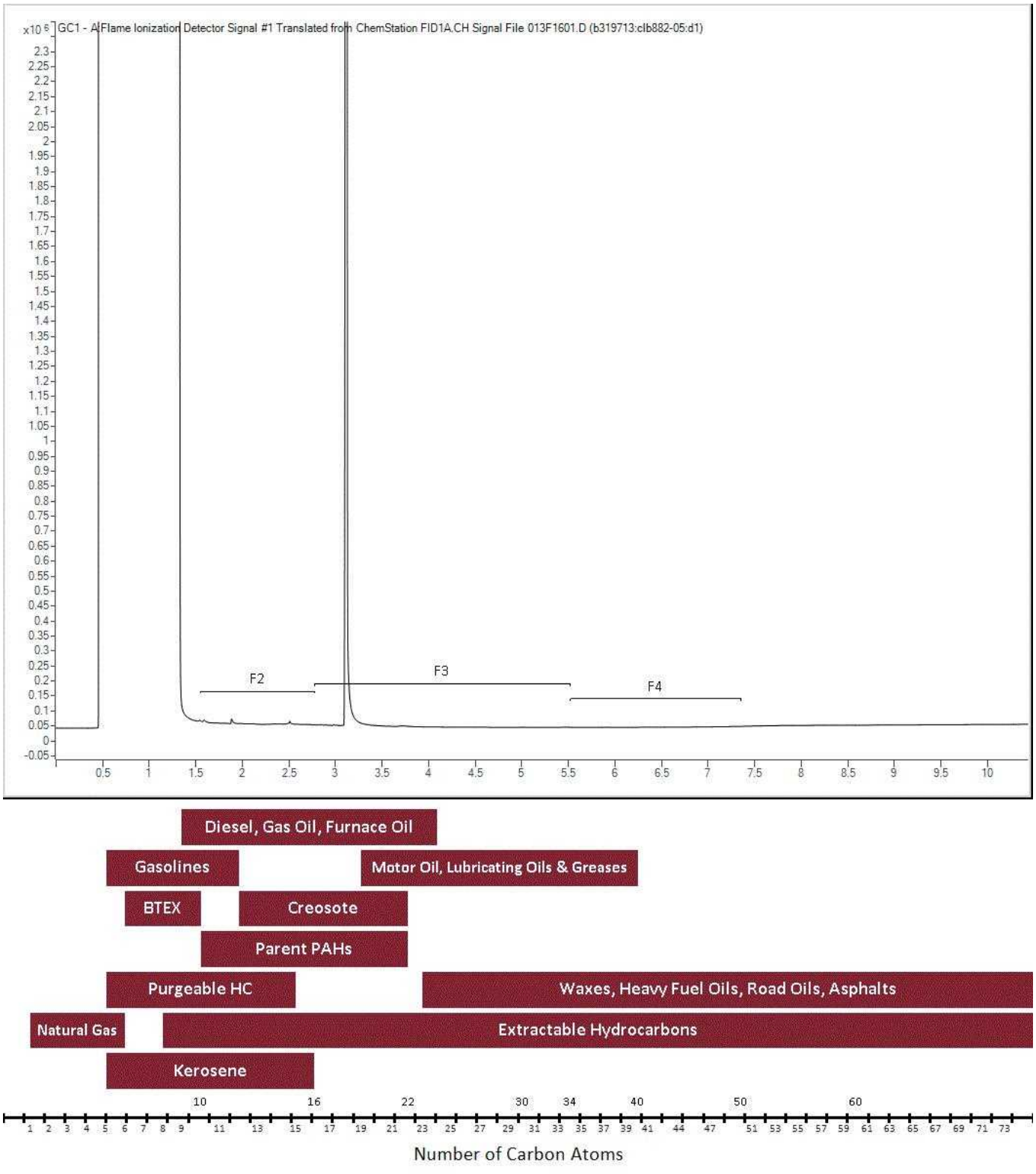
hpchem13\HPchem\1\DATA\2024\03\RUN0324

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

Bureau Veritas Job #: C419882
Report Date: 2024/04/04
Bureau Veritas Sample: CLB882 Lab-Dup

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-US-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem13\HPchem\1\DATA\2024\03\RUN0324

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

Maxxam
A Bureau Veritas Group Company

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Fax: (780) 450-4187
Toll Free: (800) 386-7247

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EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 299617

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: Alex.haigh@worley.com	Email: Alex.haigh@worley.com
Ph: 587-897-6249	Ph: 587-897-6249
Sampler Name (Print): Stacy Gibb / Alex Haigh	Consultant Project #: 417085-49223-23200

#	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1	AEMP-DS-0?6		X			18	2024/03/15	14:31	X	
2	AEMP-US-01		X			18	2024/03/16	12:15	X	
3										
4										
5										
6										
7										
8										
9										
10										

ANALYSIS REQUESTED

#	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIST ☐	MERCURY: TOTAL ☒ DISSOLVED ☑	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	O&G & Grease	Tox, DOC, Sulphide, COD	Nitrate, Nitrite, Ammonia, Total TKN	Orthophosphate	Sulphur - total & dissolved	Alkylated PAHs TPH	Air Bubbles in BTEX possible
1		X	X							X	X					X			X	X	X	X	X	X	X	X
2		X	X							X	X					X			X	X	X	X	X	X	X	X
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										

mcal-2024-03-1057

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-49223-23200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email Canada.chemistry@worley.com cacal_IOR data track@worley.com stacy.gibb@worley.com
IESA2601436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT	✓				3	3	3
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID # 111CATL	TEMP °C	1	2	3
SEAL PRESENT	✓				1	0	1
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT							
SEAL INTACT							
COOLING MEDIA PRESENT							

LAB USE ONLY
MAXXAM JOB # C4I 9882

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Alex Haigh	2024/03/17	0900	1. Deji Wu		2024/03/20	13:23
2.	Aminat Azeez	2024/03/20	17:30	2. Shaira Cua	Shaira Cua	2024/03/21	07:00
3.				3.			

SAMPLES
LABELED BY: EPL
VERIFIED BY: SEL

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299618

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/03
Report #: R3483170
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C420365
Received: 2024/03/22, 13:38

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	3	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	3		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons (F2-F4 in water) (1, 3)	3	AB SOP-00037	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease (Gravimetric, n-Hexane) (1)	3	AB SOP-00092	SM 23 5520B/5520F m
Target & Alkylated PAH in Water by GC/MS (1, 5)	3	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	3		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

Task Order#: 417085-49223
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Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/03
Report #: R3483170
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C420365
Received: 2024/03/22, 13:38

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	3	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299618

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/03
Report #: R3483170
Version: 2 - Final

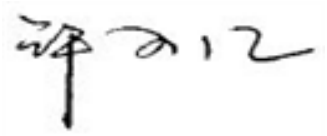
CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C420365

Received: 2024/03/22, 13:38

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



Mary (Xiaohong) Xu
Customer Solutions Representative
03 Apr 2024 17:34:39

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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

Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

AT1 BTEX AND F1-F4 IN WATER (WATER)

Bureau Veritas ID		CLE170			CLE170			CLE171		
Sampling Date		2024/03/18 13:20			2024/03/18 13:20			2024/03/18 14:20		
COC Number		299618			299618			299618		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-02**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B320535				<0.10	0.10	B320535
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	0.10	B320535				<0.10	0.10	B320535
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	0.20	B320535				<0.20	0.20	B320535
Volatiles										
Benzene	mg/L	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334
Toluene	mg/L	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334
Ethylbenzene	mg/L	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334
m & p-Xylene	mg/L	<0.00080	0.00080	B321334	<0.00080	0.00080	B321334	<0.00080	0.00080	B321334
o-Xylene	mg/L	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334	<0.00040	0.00040	B321334
Xylenes (Total)	mg/L	<0.00089	0.00089	B320320				<0.00089	0.00089	B320955
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	B320320				<0.10	0.10	B320955
F1 (C6-C10)	mg/L	<0.10	0.10	B321334	<0.10	0.10	B321334	<0.10	0.10	B321334
Extraction Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	106		B320535				105		B320535
Instrument Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	102		B321334	104		B321334	105		B321334
4-Bromofluorobenzene (sur.)	%	100		B321334	97		B321334	100		B321334
D4-1,2-Dichloroethane (sur.)	%	102		B321334	104		B321334	104		B321334

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

AT1 BTEX AND F1-F4 IN WATER (WATER)

Bureau Veritas ID		CLE172		
Sampling Date		2024/03/18 16:00		
COC Number		299618		
	UNITS	**AEMP-DUP3-FIELD BLANK**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B320535
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	0.10	B320535
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	0.20	B320535
Volatiles				
Benzene	mg/L	<0.00040	0.00040	B321334
Toluene	mg/L	<0.00040	0.00040	B321334
Ethylbenzene	mg/L	<0.00040	0.00040	B321334
m & p-Xylene	mg/L	<0.00080	0.00080	B321334
o-Xylene	mg/L	<0.00040	0.00040	B321334
Xylenes (Total)	mg/L	<0.00089	0.00089	B320955
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	B320955
F1 (C6-C10)	mg/L	<0.10	0.10	B321334
Extraction Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	104		B320535
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	106		B321334
4-Bromofluorobenzene (sur.)	%	98		B321334
D4-1,2-Dichloroethane (sur.)	%	103		B321334
RDL = Reportable Detection Limit				

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CLE170	CLE171		
Sampling Date		2024/03/18 13:20	2024/03/18 14:20		
COC Number		299618	299618		
	UNITS	**AEMP-DS-03**	**AEMP-DS-02**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.088	0.11	0.020	B322528
Nutrients					
Total Nitrogen (N)	mg/L	0.28	0.32	0.020	B323278
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CLE170	CLE171		
Sampling Date		2024/03/18 13:20	2024/03/18 14:20		
COC Number		299618	299618		
	UNITS	**AEMP-DS-03**	**AEMP-DS-02**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	0.000023	<0.000020	0.000020	B320957
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B324912
Total Aluminum (Al)	mg/L	0.059	0.024	0.0030	B324047
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B324047
Total Arsenic (As)	mg/L	0.00036	0.00029	0.00020	B324047
Total Barium (Ba)	mg/L	0.064	0.042	0.010	B324062
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B324047
Total Boron (B)	mg/L	<0.020	<0.020	0.020	B324062
Total Calcium (Ca)	mg/L	45	30	0.30	B324062
Total Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B324047
Total Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B324047
Total Copper (Cu)	mg/L	0.0016	0.0011	0.0010	B324047
Total Iron (Fe)	mg/L	0.078	<0.060	0.060	B324062
Total Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B324047
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B324062
Total Magnesium (Mg)	mg/L	12	9.7	0.20	B324062
Total Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B324062
Total Molybdenum (Mo)	mg/L	0.0013	0.00088	0.00020	B324047
Total Nickel (Ni)	mg/L	0.0018	0.0016	0.00050	B324047
Total Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B324062
Total Potassium (K)	mg/L	1.2	0.95	0.30	B324062
Total Selenium (Se)	mg/L	0.00047	0.00023	0.00020	B324047
Total Silicon (Si)	mg/L	2.3	1.7	0.50	B324062
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B324047
Total Sodium (Na)	mg/L	15	9.9	0.50	B324062
Total Strontium (Sr)	mg/L	0.33	0.23	0.020	B324062
Total Sulphur (S)	mg/L	17	10	0.20	B324062
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B324047
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B324047
Total Titanium (Ti)	mg/L	0.0027	<0.0010	0.0010	B324047
Total Uranium (U)	mg/L	0.0011	0.00071	0.00010	B324047
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CLE170	CLE171		
Sampling Date		2024/03/18 13:20	2024/03/18 14:20		
COC Number		299618	299618		
	UNITS	**AEMP-DS-03**	**AEMP-DS-02**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B324047
Total Zinc (Zn)	mg/L	0.0045	0.0067	0.0030	B324047
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLE170			CLE170			CLE171		
Sampling Date		2024/03/18 13:20			2024/03/18 13:20			2024/03/18 14:20		
COC Number		299618			299618			299618		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-02**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	170	0.50	B320903				120	0.50	B320903
Ion Balance (% Difference)	%	0.34	N/A	B320328				0.83	N/A	B320328
Nitrate (N)	mg/L	0.19	0.010	B320476				0.21	0.010	B320476
Nitrate (NO3)	mg/L	0.84	0.044	B322527				0.95	0.044	B322527
Nitrite (NO2)	mg/L	<0.033	0.033	B322527				<0.033	0.033	B322527
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B320587				<0.0020	0.0020	B320587
Demand Parameters										
Chemical Oxygen Demand	mg/L	14	10	B322696				<10 (1)	10	B322696
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B320956				<0.000020	0.000020	B320956
Misc. Inorganics										
Conductivity	uS/cm	390	2.0	B323251	390	2.0	B323251	270	2.0	B323251
Dissolved Organic Carbon (C)	mg/L	4.5	0.50	B323393				3.4	0.50	B323356
pH	pH	8.02	N/A	B323246	8.12	N/A	B323246	8.01	N/A	B323246
Total Organic Carbon (C)	mg/L	4.2	0.50	B323357				2.6	0.50	B323357
Total Dissolved Solids	mg/L	230	10	B321034				160	10	B321034
Total Suspended Solids	mg/L	<1.0	1.0	B321032				<1.0	1.0	B321032
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B323239	<1.0	1.0	B323239	<1.0	1.0	B323239
Alkalinity (Total as CaCO3)	mg/L	120	1.0	B323239	120	1.0	B323239	86	1.0	B323239
Bicarbonate (HCO3)	mg/L	140	1.0	B323239	140	1.0	B323239	110	1.0	B323239
Carbonate (CO3)	mg/L	<1.0	1.0	B323239	<1.0	1.0	B323239	<1.0	1.0	B323239
Hydroxide (OH)	mg/L	<1.0	1.0	B323239	<1.0	1.0	B323239	<1.0	1.0	B323239
Total Sulphide	mg/L	<0.0018	0.0018	B321391				<0.0018	0.0018	B321391
Chloride (Cl)	mg/L	22	1.0	B323082				14	1.0	B323082
Sulphate (SO4)	mg/L	54	1.0	B323082				35	1.0	B323082

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLE170			CLE170			CLE171		
Sampling Date		2024/03/18 13:20			2024/03/18 13:20			2024/03/18 14:20		
COC Number		299618			299618			299618		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-02**	**RDL**	**QC Batch**
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B322246				<0.015	0.015	B322246
Orthophosphate (P)	mg/L	0.0031	0.0030	B323492				<0.0030	0.0030	B323492
Nitrite (N)	mg/L	<0.010	0.010	B322996				<0.010	0.010	B322996
Nitrate plus Nitrite (N)	mg/L	0.19	0.010	B322996				0.21	0.010	B322996
Misc. Organics										
Total Oil and grease	mg/L	4.0	2.0	B320520				<2.0	2.0	B320520
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B323522				<2.0	2.0	B323522
Physical Properties										
True Colour	PtCo units	6.9	2.0	B323520				<2.0	2.0	B323520
Physical Properties										
Turbidity	NTU	3.9	0.10	B321131	3.4	0.10	B321131	2.1	0.10	B321131

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CLE172		
Sampling Date		2024/03/18 16:00		
COC Number		299618		
	UNITS	**AEMP-DUP3-FIELD BLANK**	**RDL**	**QC Batch**
Misc. Organics				
Total Oil and grease	mg/L	<2.0	2.0	B320520
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B323522

RDL = Reportable Detection Limit

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLE170	CLE171	CLE172		
Sampling Date		2024/03/18 13:20	2024/03/18 14:20	2024/03/18 16:00		
COC Number		299618	299618	299618		
	UNITS	**AEMP-DS-03**	**AEMP-DS-02**	**AEMP-DUP3-FIELD BLANK**	**RDL**	**QC Batch**
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	<0.000010	0.000010	B320905
Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Acridine	ug/L	<0.040	<0.040	<0.040	0.040	B319712
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	B319712
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
Fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	B319712
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Perylene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
Quinoline	ug/L	<0.20	<0.20	<0.20	0.20	B319712
Retene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C1-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
C3-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
C4-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
C2-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B319712
RDL = Reportable Detection Limit						

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLE170	CLE171	CLE172		
Sampling Date		2024/03/18 13:20	2024/03/18 14:20	2024/03/18 16:00		
COC Number		299618	299618	299618		
	UNITS	**AEMP-DS-03**	**AEMP-DS-02**	**AEMP-DUP3-FIELD BLANK**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C2-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C3-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C2-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C3-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C4-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
C1-Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
1-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Extraction Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	115	88	101		B319712
D8-ACENAPHTHYLENE (sur.)	%	101	78	88		B319712
D8-NAPHTHALENE (sur.)	%	102	77	85		B319712
TERPHENYL-D14 (sur.)	%	129	100	118		B319712
RDL = Reportable Detection Limit						

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CLE170	CLE171		
Sampling Date		2024/03/18 13:20	2024/03/18 14:20		
COC Number		299618	299618		
	UNITS	**AEMP-DS-03**	**AEMP-DS-02**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.025 (1)	<0.025 (1)	0.025	B325437

RDL = Reportable Detection Limit
(1) Mercury RDL raised due to background interference.

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Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CLE170	CLE171		
Sampling Date		2024/03/18 13:20	2024/03/18 14:20		
COC Number		299618	299618		
	UNITS	**AEMP-DS-03**	**AEMP-DS-02**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.0033	<0.0030	0.0030	B323308
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B323308
Dissolved Arsenic (As)	mg/L	0.00029	0.00021	0.00020	B323308
Dissolved Barium (Ba)	mg/L	0.061	0.040	0.010	B322768
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B322768
Dissolved Calcium (Ca)	mg/L	47	30	0.30	B322768
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B323308
Dissolved Copper (Cu)	mg/L	0.0017	<0.0010	0.0010	B323308
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B322768
Dissolved Lead (Pb)	mg/L	<0.00020	0.00049	0.00020	B323308
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	B322768
Dissolved Magnesium (Mg)	mg/L	13	10	0.20	B322768
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B322768
Dissolved Molybdenum (Mo)	mg/L	0.0010	0.00063	0.00020	B323308
Dissolved Nickel (Ni)	mg/L	0.0015	0.00085	0.00050	B323308
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B322768
Dissolved Potassium (K)	mg/L	1.3	1.1	0.30	B322768
Dissolved Selenium (Se)	mg/L	0.00039	<0.00020	0.00020	B323308
Dissolved Silicon (Si)	mg/L	2.3	1.7	0.50	B322768
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B323308
Dissolved Sodium (Na)	mg/L	15	10	0.50	B322768
Dissolved Strontium (Sr)	mg/L	0.33	0.22	0.020	B322768
Dissolved Sulphur (S)	mg/L	17	11	0.20	B322768
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B323308
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Uranium (U)	mg/L	0.00084	0.00049	0.00010	B323308
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Zinc (Zn)	mg/L	0.0049	0.0036	0.0030	B323308
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLE170
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B323239	N/A	2024/03/26	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B321334	N/A	2024/03/25	Raheela Sahar
F1-BTEX	CALC/MS	B320320	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B320956	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B320957	N/A	2024/03/28	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B323082	N/A	2024/03/26	Shanna McKort
COD by Colorimeter	M/PROB	B322696	N/A	2024/03/26	Amy Phan
True Colour	SPEC/COL	B323520	N/A	2024/03/26	Shanna McKort
Carbon (DOC)	TECH	B323393	N/A	2024/03/27	Ye Hyun KIM
Conductivity @25C	COND	B323251	N/A	2024/03/26	Ayesha Shakoor
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B320535	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B320587	N/A	2024/03/25	Automated Statchk
Hardness	CALC	B320903	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B325437	2024/03/27	2024/04/02	Mandeep Kaur - 1
Mercury (Total) by CV	CV	B324912	2024/03/27	2024/03/28	Meet Patel
Elements by ICP - Dissolved	ICPA	B322768	N/A	2024/03/26	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B324062	2024/03/27	2024/03/27	Sarah Dolan
Elements by ICPMS - Dissolved	ICPM	B323308	N/A	2024/03/27	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B324047	2024/03/27	2024/03/27	Kristijan Kovac
Ion Balance	CALC	B320328	N/A	2024/03/27	Automated Statchk
Ammonia-N (Total)	KONE	B322246	N/A	2024/03/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B322527	N/A	2024/03/27	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B322996	N/A	2024/03/26	Adam Fishleigh
Nitrate (as N)	CALC	B320476	2024/03/27	2024/03/27	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B320520	2024/03/28	2024/03/28	Ranak Singh
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B320905	N/A	2024/03/27	Automated Statchk
pH @25°C	AT/ALK	B323246	N/A	2024/03/26	Ayesha Shakoor
Orthophosphate by Automated Analyzer	KONE	B323492	N/A	2024/03/26	Mary Anne Dela Cruz
Total Sulphide	SPEC	B321391	N/A	2024/03/25	Bailey Morrison
Total Dissolved Solids (Filt. Residue)	BAL	B321034	2024/03/23	2024/03/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B322528	N/A	2024/03/27	Automated Statchk
Nitrogen (Total)	AC/COL	B323278	2024/03/26	2024/03/27	Carlo Truong
Carbon (Total Organic)	TECH	B323357	N/A	2024/03/27	Ye Hyun KIM
Hydrocarbon by IR (Mineral oil & grease)	IR	B323522	2024/03/27	2024/03/28	Chuhan Huang
Total Suspended Solids (NFR)	BAL	B321032	2024/03/23	2024/03/25	Daryl Viktoria Noval
Turbidity	TURB	B321131	N/A	2024/03/23	Daryl Viktoria Noval

Bureau Veritas ID: CLE170 Dup
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B323239	N/A	2024/03/26	Ayesha Shakoor

Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLE170 Dup
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B321334	N/A	2024/03/25	Raheela Sahar
Conductivity @25C	COND	B323251	N/A	2024/03/26	Ayesha Shakoor
pH @25°C	AT/ALK	B323246	N/A	2024/03/26	Ayesha Shakoor
Turbidity	TURB	B321131	N/A	2024/03/23	Daryl Viktoria Noval

Bureau Veritas ID: CLE171
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B323239	N/A	2024/03/26	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B321334	N/A	2024/03/25	Raheela Sahar
F1-BTEX	CALC/MS	B320955	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B320956	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B320957	N/A	2024/03/28	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B323082	N/A	2024/03/26	Shanna McKort
COD by Colorimeter	M/PROB	B322696	N/A	2024/03/26	Amy Phan
True Colour	SPEC/COL	B323520	N/A	2024/03/26	Shanna McKort
Carbon (DOC)	TECH	B323356	N/A	2024/03/27	Ye Hyun KIM
Conductivity @25C	COND	B323251	N/A	2024/03/26	Ayesha Shakoor
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B320535	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B320587	N/A	2024/03/25	Automated Statchk
Hardness	CALC	B320903	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B325437	2024/03/27	2024/04/02	Mandeep Kaur - 1
Mercury (Total) by CV	CV	B324912	2024/03/27	2024/03/28	Meet Patel
Elements by ICP - Dissolved	ICPA	B322768	N/A	2024/03/26	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B324062	2024/03/27	2024/03/27	Sarah Dolan
Elements by ICPMS - Dissolved	ICPM	B323308	N/A	2024/03/27	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B324047	2024/03/27	2024/03/27	Kristijan Kovac
Ion Balance	CALC	B320328	N/A	2024/03/27	Automated Statchk
Ammonia-N (Total)	KONE	B322246	N/A	2024/03/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B322527	N/A	2024/03/27	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B322996	N/A	2024/03/26	Adam Fishleigh
Nitrate (as N)	CALC	B320476	2024/03/27	2024/03/27	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B320520	2024/03/28	2024/03/28	Ranak Singh
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B320905	N/A	2024/03/27	Automated Statchk
pH @25°C	AT/ALK	B323246	N/A	2024/03/26	Ayesha Shakoor
Orthophosphate by Automated Analyzer	KONE	B323492	N/A	2024/03/26	Mary Anne Dela Cruz
Total Sulphide	SPEC	B321391	N/A	2024/03/25	Bailey Morrison
Total Dissolved Solids (Filt. Residue)	BAL	B321034	2024/03/23	2024/03/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B322528	N/A	2024/03/27	Automated Statchk
Nitrogen (Total)	AC/COL	B323278	2024/03/26	2024/03/27	Carlo Truong
Carbon (Total Organic)	TECH	B323357	N/A	2024/03/27	Ye Hyun KIM

Bureau Veritas Job #: C420365
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLE171
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrocarbon by IR (Mineral oil & grease)	IR	B323522	2024/03/27	2024/03/28	Chuhan Huang
Total Suspended Solids (NFR)	BAL	B321032	2024/03/23	2024/03/25	Daryl Viktoria Noval
Turbidity	TURB	B321131	N/A	2024/03/23	Daryl Viktoria Noval

Bureau Veritas ID: CLE172
Sample ID: AEMP-DUP3-FIELD BLANK
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B321334	N/A	2024/03/25	Raheela Sahar
F1-BTEX	CALC/MS	B320955	N/A	2024/03/27	Automated Statchk
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B320535	2024/03/24	2024/03/24	Bryanna Quach
Oil and Grease (Gravimetric, n-Hexane)	CALC	B320520	2024/03/28	2024/03/28	Ranak Singh
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B320905	N/A	2024/03/27	Automated Statchk
Hydrocarbon by IR (Mineral oil & grease)	IR	B323522	2024/03/27	2024/03/28	Chuhan Huang

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GENERAL COMMENTS

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

Package 1	3.0°C

Temperatures upon receipt at Bureau Veritas Labs Calgary
Package 1: 1.7 degrees C
Each temperature is the average of up to three cooler temperatures taken at receipt.

Sample CLE170 [AEMP-DS-03] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for True Colour.

Sample CLE171 [AEMP-DS-02] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for True Colour.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B319712	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/03/24		102	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		116	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		83	%	50 - 130
			Acenaphthene	2024/03/24	<0.10		ug/L	
			Acenaphthylene	2024/03/24	<0.10		ug/L	
			Acridine	2024/03/24	<0.040		ug/L	
			Anthracene	2024/03/24	<0.010		ug/L	
			Benzo(a)anthracene	2024/03/24	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/03/24	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/03/24	<0.050		ug/L	
			Benzo(a)pyrene	2024/03/24	<0.0075		ug/L	
			Benzo(e)pyrene	2024/03/24	<0.050		ug/L	
			Chrysene	2024/03/24	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/03/24	<0.0075		ug/L	
			Fluoranthene	2024/03/24	<0.010		ug/L	
			Fluorene	2024/03/24	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/03/24	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/03/24	<0.0085		ug/L	
			2-Methylnaphthalene	2024/03/24	<0.10		ug/L	
			Naphthalene	2024/03/24	<0.10		ug/L	
			Phenanthrene	2024/03/24	<0.050		ug/L	
			Perylene	2024/03/24	<0.050		ug/L	
			Pyrene	2024/03/24	<0.020		ug/L	
			Quinoline	2024/03/24	<0.20		ug/L	
			Retene	2024/03/24	<0.050		ug/L	
			C1-Naphthalene	2024/03/24	<0.10		ug/L	
			C3-Naphthalene	2024/03/24	<0.10		ug/L	
			C4-Naphthalene	2024/03/24	<0.10		ug/L	
			C2-Naphthalene	2024/03/24	<0.10		ug/L	
			Biphenyl	2024/03/24	<0.020		ug/L	
			C1-biphenyl	2024/03/24	<0.020		ug/L	
			C2-biphenyl	2024/03/24	<0.020		ug/L	
			C1-fluorene	2024/03/24	<0.050		ug/L	
			C2-fluorene	2024/03/24	<0.050		ug/L	
			C3-fluorene	2024/03/24	<0.050		ug/L	
			Dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C2-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C3-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C4-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C1-Acenaphthene	2024/03/24	<0.10		ug/L	
			1-Methylnaphthalene	2024/03/24	<0.10		ug/L	
B320520	RSX	Method Blank	Total Oil and grease	2024/03/28	<2.0		mg/L	
B320535	BQU	Method Blank	O-TERPHENYL (sur.)	2024/03/24		108	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24	<0.10		mg/L	
			F3 (C16-C34 Hydrocarbons)	2024/03/24	<0.10		mg/L	
			F4 (C34-C50 Hydrocarbons)	2024/03/24	<0.20		mg/L	
B321032	DVN	Method Blank	Total Suspended Solids	2024/03/25	<1.0		mg/L	
B321034	DVN	Method Blank	Total Dissolved Solids	2024/03/25	<10		mg/L	
B321131	DVN	Method Blank	Turbidity	2024/03/23	<0.10		NTU	
B321334	RSA	Method Blank	1,4-Difluorobenzene (sur.)	2024/03/25		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/25		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/25		101	%	50 - 140
			Benzene	2024/03/25	<0.00040		mg/L	
			Toluene	2024/03/25	<0.00040		mg/L	
			Ethylbenzene	2024/03/25	<0.00040		mg/L	
			m & p-Xylene	2024/03/25	<0.00080		mg/L	
			o-Xylene	2024/03/25	<0.00040		mg/L	
			F1 (C6-C10)	2024/03/25	<0.10		mg/L	
B321391	BYM	Method Blank	Total Sulphide	2024/03/25	<0.0018		mg/L	
B322246	AFI	Method Blank	Total Ammonia (N)	2024/03/25	<0.015		mg/L	
B322696	AP1	Method Blank	Chemical Oxygen Demand	2024/03/26	<10		mg/L	
B322768	HQV	Method Blank	Dissolved Iron (Fe)	2024/03/26	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/03/26	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/03/26	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/03/26	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/03/26	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/03/26	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/03/26	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/03/26	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/03/26	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/03/26	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/03/26	<0.50		mg/L	
			Dissolved Boron (B)	2024/03/26	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/03/26	<0.30		mg/L	
B322996	AFI	Method Blank	Nitrite (N)	2024/03/26	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/03/26	<0.010		mg/L	
B323082	SKM	Method Blank	Chloride (Cl)	2024/03/26	<1.0		mg/L	
			Sulphate (SO4)	2024/03/26	<1.0		mg/L	
B323239	A5S	Method Blank	Alkalinity (Total as CaCO3)	2024/03/26	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/03/26	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/03/26	<1.0		mg/L	
			Carbonate (CO3)	2024/03/26	<1.0		mg/L	
			Hydroxide (OH)	2024/03/26	<1.0		mg/L	
B323251	A5S	Method Blank	Conductivity	2024/03/26	<2.0		uS/cm	
B323278	CTU	Method Blank	Total Nitrogen (N)	2024/03/27	<0.020		mg/L	
B323308	KKC	Method Blank	Dissolved Aluminum (Al)	2024/03/27	<0.0030		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Chromium (Cr)	2024/03/27	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/03/27	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/03/27	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/03/27	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/03/27	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/03/27	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/03/27	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/03/27	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/03/27	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/03/27	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/03/27	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/03/27	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/03/27	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/03/27	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/03/27	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/03/27	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/03/27	<0.0010		mg/L	
B323356	YHK	Method Blank	Dissolved Organic Carbon (C)	2024/03/27	<0.50		mg/L	
B323357	YHK	Method Blank	Total Organic Carbon (C)	2024/03/27	<0.50		mg/L	
B323393	YHK	Method Blank	Dissolved Organic Carbon (C)	2024/03/27	<0.50		mg/L	
B323492	MAP	Method Blank	Orthophosphate (P)	2024/03/26	<0.0030		mg/L	
B323520	SKM	Method Blank	True Colour	2024/03/26	<2.0		PtCo units	
B323522	CHA	Method Blank	Total Petroleum Hydrocarbon	2024/03/28	<2.0		mg/L	
B324047	KKC	Method Blank	Total Aluminum (Al)	2024/03/27	<0.0030		mg/L	
			Total Chromium (Cr)	2024/03/27	<0.0010		mg/L	
			Total Cobalt (Co)	2024/03/27	<0.00030		mg/L	
			Total Copper (Cu)	2024/03/27	<0.0010		mg/L	
			Total Lead (Pb)	2024/03/27	<0.00020		mg/L	
			Total Antimony (Sb)	2024/03/27	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/03/27	<0.00020		mg/L	
			Total Nickel (Ni)	2024/03/27	<0.00050		mg/L	
			Total Selenium (Se)	2024/03/27	<0.00020		mg/L	
			Total Silver (Ag)	2024/03/27	<0.00010		mg/L	
			Total Arsenic (As)	2024/03/27	<0.00020		mg/L	
			Total Thallium (Tl)	2024/03/27	<0.00020		mg/L	
			Total Tin (Sn)	2024/03/27	<0.0010		mg/L	
			Total Titanium (Ti)	2024/03/27	<0.0010		mg/L	
			Total Uranium (U)	2024/03/27	<0.00010		mg/L	
			Total Vanadium (V)	2024/03/27	<0.0010		mg/L	
			Total Zinc (Zn)	2024/03/27	<0.0030		mg/L	
			Total Beryllium (Be)	2024/03/27	<0.0010		mg/L	
B324062	S1D	Method Blank	Total Iron (Fe)	2024/03/27	<0.060		mg/L	
			Total Lithium (Li)	2024/03/27	<0.020		mg/L	
			Total Magnesium (Mg)	2024/03/27	<0.20		mg/L	
			Total Manganese (Mn)	2024/03/27	<0.0040		mg/L	
			Total Potassium (K)	2024/03/27	<0.30		mg/L	
			Total Sodium (Na)	2024/03/27	<0.50		mg/L	
			Total Strontium (Sr)	2024/03/27	<0.020		mg/L	
			Total Sulphur (S)	2024/03/27	<0.20		mg/L	
			Total Phosphorus (P)	2024/03/27	<0.10		mg/L	
			Total Barium (Ba)	2024/03/27	<0.010		mg/L	
			Total Silicon (Si)	2024/03/27	<0.50		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Boron (B)	2024/03/27	<0.020		mg/L	
			Total Calcium (Ca)	2024/03/27	<0.30		mg/L	
B324912	MPK	Method Blank	Total Mercury (Hg)	2024/03/28	<0.0019		ug/L	
B325437	MKJ	Method Blank	Dissolved Mercury (Hg)	2024/03/28	<0.0019		ug/L	
B321131	DVN	RPD [CLE170-05]	Turbidity	2024/03/23	16		%	20
B321334	RSA	RPD [CLE170-04]	Benzene	2024/03/25	NC		%	30
			Toluene	2024/03/25	NC		%	30
			Ethylbenzene	2024/03/25	NC		%	30
			m & p-Xylene	2024/03/25	NC		%	30
			o-Xylene	2024/03/25	NC		%	30
			F1 (C6-C10)	2024/03/25	NC		%	30
B323239	A5S	RPD [CLE170-06]	Alkalinity (Total as CaCO3)	2024/03/26	0.99		%	20
			Alkalinity (PP as CaCO3)	2024/03/26	NC		%	20
			Bicarbonate (HCO3)	2024/03/26	0.99		%	20
			Carbonate (CO3)	2024/03/26	NC		%	20
			Hydroxide (OH)	2024/03/26	NC		%	20
B323246	A5S	RPD [CLE170-06]	pH	2024/03/26	1.3		%	N/A
B323251	A5S	RPD [CLE170-06]	Conductivity	2024/03/26	0.53		%	10
B321334	RSA	Matrix Spike [CLE171-04]	1,4-Difluorobenzene (sur.)	2024/03/25		101	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/25		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/25		101	%	50 - 140
			Benzene	2024/03/25		93	%	50 - 140
			Toluene	2024/03/25		95	%	50 - 140
			Ethylbenzene	2024/03/25		104	%	50 - 140
			m & p-Xylene	2024/03/25		100	%	50 - 140
			o-Xylene	2024/03/25		98	%	50 - 140
			F1 (C6-C10)	2024/03/25		98	%	60 - 140
B319712	JC7	LCS	D10-ANTHRACENE (sur.)	2024/03/24		105	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		123	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		78	%	50 - 130
			Acenaphthene	2024/03/24		102	%	50 - 130
			Acenaphthylene	2024/03/24		100	%	50 - 130
			Acridine	2024/03/24		80	%	50 - 130
			Anthracene	2024/03/24		84	%	50 - 130
			Benzo(a)anthracene	2024/03/24		104	%	50 - 130
			Benzo(b&j)fluoranthene	2024/03/24		111	%	50 - 130
			Benzo(k)fluoranthene	2024/03/24		119	%	50 - 130
			Benzo(g,h,i)perylene	2024/03/24		109	%	50 - 130
			Benzo(c)phenanthrene	2024/03/24		114	%	50 - 130
			Benzo(a)pyrene	2024/03/24		108	%	50 - 130
			Benzo(e)pyrene	2024/03/24		99	%	50 - 130
			Chrysene	2024/03/24		112	%	50 - 130
			Dibenz(a,h)anthracene	2024/03/24		118	%	50 - 130
			Fluoranthene	2024/03/24		111	%	50 - 130
			Fluorene	2024/03/24		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/03/24		108	%	50 - 130
			2-Methylnaphthalene	2024/03/24		96	%	50 - 130
			Naphthalene	2024/03/24		102	%	50 - 130
			Phenanthrene	2024/03/24		118	%	50 - 130
			Perylene	2024/03/24		103	%	50 - 130
			Pyrene	2024/03/24		114	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Quinoline	2024/03/24		104	%	50 - 130
			C1-Naphthalene	2024/03/24		85	%	50 - 130
			C3-Naphthalene	2024/03/24		101	%	50 - 130
			C2-Naphthalene	2024/03/24		100	%	50 - 130
			C1-biphenyl	2024/03/24		99	%	50 - 130
			C1 phenanthrene/anthracene	2024/03/24		114	%	50 - 130
			C2 phenanthrene/anthracene	2024/03/24		110	%	50 - 130
			C1 fluoranthene/pyrene	2024/03/24		107	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/03/24		88	%	30 - 130
			1-Methylnaphthalene	2024/03/24		85	%	50 - 130
B320520	RSX	LCS	Total Oil and grease	2024/03/28		105	%	70 - 130
B320535	BQU	LCS	O-TERPHENYL (sur.)	2024/03/24		108	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24		109	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/03/24		105	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/03/24		90	%	60 - 140
B321032	DVN	LCS	Total Suspended Solids	2024/03/25		99	%	80 - 120
B321034	DVN	LCS	Total Dissolved Solids	2024/03/25		98	%	80 - 120
B321131	DVN	LCS	Turbidity	2024/03/23		101	%	80 - 120
B321334	RSA	LCS	1,4-Difluorobenzene (sur.)	2024/03/25		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/25		102	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/25		98	%	50 - 140
			Benzene	2024/03/25		90	%	60 - 130
			Toluene	2024/03/25		94	%	60 - 130
			Ethylbenzene	2024/03/25		103	%	60 - 130
			m & p-Xylene	2024/03/25		100	%	60 - 130
			o-Xylene	2024/03/25		98	%	60 - 130
			F1 (C6-C10)	2024/03/25		94	%	60 - 140
B321391	BYM	LCS	Total Sulphide	2024/03/25		101	%	80 - 120
B322246	AFI	LCS	Total Ammonia (N)	2024/03/25		104	%	80 - 120
B322696	AP1	LCS	Chemical Oxygen Demand	2024/03/26		101	%	80 - 120
B322768	HQV	LCS	Dissolved Iron (Fe)	2024/03/26		103	%	80 - 120
			Dissolved Lithium (Li)	2024/03/26		96	%	80 - 120
			Dissolved Magnesium (Mg)	2024/03/26		101	%	80 - 120
			Dissolved Manganese (Mn)	2024/03/26		102	%	80 - 120
			Dissolved Potassium (K)	2024/03/26		98	%	80 - 120
			Dissolved Sodium (Na)	2024/03/26		97	%	80 - 120
			Dissolved Strontium (Sr)	2024/03/26		99	%	80 - 120
			Dissolved Sulphur (S)	2024/03/26		100	%	80 - 120
			Dissolved Phosphorus (P)	2024/03/26		102	%	80 - 120
			Dissolved Barium (Ba)	2024/03/26		97	%	80 - 120
			Dissolved Silicon (Si)	2024/03/26		103	%	80 - 120
			Dissolved Boron (B)	2024/03/26		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/03/26		98	%	80 - 120
B322996	AFI	LCS	Nitrite (N)	2024/03/26		105	%	80 - 120
			Nitrate plus Nitrite (N)	2024/03/26		93	%	80 - 120
B323082	SKM	LCS	Chloride (Cl)	2024/03/26		109	%	80 - 120
			Sulphate (SO4)	2024/03/26		100	%	80 - 120
B323239	A5S	LCS	Alkalinity (Total as CaCO3)	2024/03/26		100	%	80 - 120
B323246	A5S	LCS	pH	2024/03/26		100	%	97 - 103
B323251	A5S	LCS	Conductivity	2024/03/26		104	%	90 - 110
B323278	CTU	LCS	Total Nitrogen (N)	2024/03/27		98	%	80 - 120
B323308	KKC	LCS	Dissolved Aluminum (Al)	2024/03/26		112	%	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 Chromium (Cr)	2024/03/26		96	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/26		98	%	80 - 120
			Dissolved Copper (Cu)	2024/03/26		97	%	80 - 120
			Dissolved Lead (Pb)	2024/03/26		99	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/26		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/03/26		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/26		96	%	80 - 120
			Dissolved Selenium (Se)	2024/03/26		100	%	80 - 120
			Dissolved Silver (Ag)	2024/03/26		97	%	80 - 120
			Dissolved Arsenic (As)	2024/03/26		97	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/26		98	%	80 - 120
			Dissolved Tin (Sn)	2024/03/26		98	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/26		99	%	80 - 120
			Dissolved Uranium (U)	2024/03/26		93	%	80 - 120
			Dissolved Vanadium (V)	2024/03/26		97	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/26		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/26		97	%	80 - 120
B323356	YHK	LCS	Dissolved Organic Carbon (C)	2024/03/27		92	%	80 - 120
B323357	YHK	LCS	Total Organic Carbon (C)	2024/03/27		103	%	80 - 120
B323393	YHK	LCS	Dissolved Organic Carbon (C)	2024/03/27		100	%	80 - 120
B323492	MAP	LCS	Orthophosphate (P)	2024/03/26		105	%	80 - 120
B323520	SKM	LCS	True Colour	2024/03/26		96	%	80 - 120
B323522	CHA	LCS	Total Petroleum Hydrocarbon	2024/03/28		91	%	70 - 130
B324047	KKC	LCS	Total Aluminum (Al)	2024/03/27		100	%	80 - 120
			Total Chromium (Cr)	2024/03/27		101	%	80 - 120
			Total Cobalt (Co)	2024/03/27		102	%	80 - 120
			Total Copper (Cu)	2024/03/27		101	%	80 - 120
			Total Lead (Pb)	2024/03/27		97	%	80 - 120
			Total Antimony (Sb)	2024/03/27		101	%	80 - 120
			Total Molybdenum (Mo)	2024/03/27		99	%	80 - 120
			Total Nickel (Ni)	2024/03/27		100	%	80 - 120
			Total Selenium (Se)	2024/03/27		102	%	80 - 120
			Total Silver (Ag)	2024/03/27		98	%	80 - 120
			Total Arsenic (As)	2024/03/27		103	%	80 - 120
			Total Thallium (Tl)	2024/03/27		101	%	80 - 120
			Total Tin (Sn)	2024/03/27		99	%	80 - 120
			Total Titanium (Ti)	2024/03/27		103	%	80 - 120
			Total Uranium (U)	2024/03/27		102	%	80 - 120
			Total Vanadium (V)	2024/03/27		102	%	80 - 120
			Total Zinc (Zn)	2024/03/27		99	%	80 - 120
			Total Beryllium (Be)	2024/03/27		89	%	80 - 120
B324062	S1D	LCS	Total Iron (Fe)	2024/03/27		99	%	80 - 120
			Total Lithium (Li)	2024/03/27		94	%	80 - 120
			Total Magnesium (Mg)	2024/03/27		94	%	80 - 120
			Total Manganese (Mn)	2024/03/27		100	%	80 - 120
			Total Potassium (K)	2024/03/27		95	%	80 - 120
			Total Sodium (Na)	2024/03/27		95	%	80 - 120
			Total Strontium (Sr)	2024/03/27		94	%	80 - 120
			Total Sulphur (S)	2024/03/27		93	%	80 - 120
			Total Phosphorus (P)	2024/03/27		94	%	80 - 120
			Total Barium (Ba)	2024/03/27		98	%	80 - 120
			Total Silicon (Si)	2024/03/27		97	%	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
			Total Boron (B)	2024/03/27		97	%	80 - 120
			Total Calcium (Ca)	2024/03/27		96	%	80 - 120
B324912	MPK	LCS	Total Mercury (Hg)	2024/03/28		107	%	80 - 120
B325437	MKJ	LCS	Dissolved Mercury (Hg)	2024/03/28		102	%	80 - 120
B323278	CTU	SRM	Total Nitrogen (N)	2024/03/27		96	%	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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).

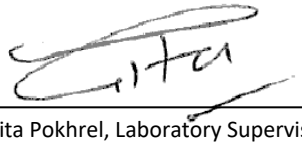
Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

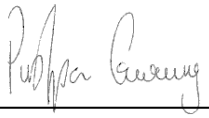
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

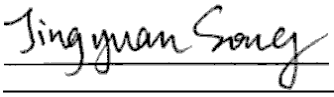


Gita Pokhrel, Laboratory Supervisor

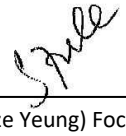


Pushpa Gurung, Laboratory Supervisor

Rahul Suryawanshi, Senior Analyst



Jingyuan Song, QP, Organics – Senior Analyst



Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

VALIDATION SIGNATURE PAGE(CONT'D)

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

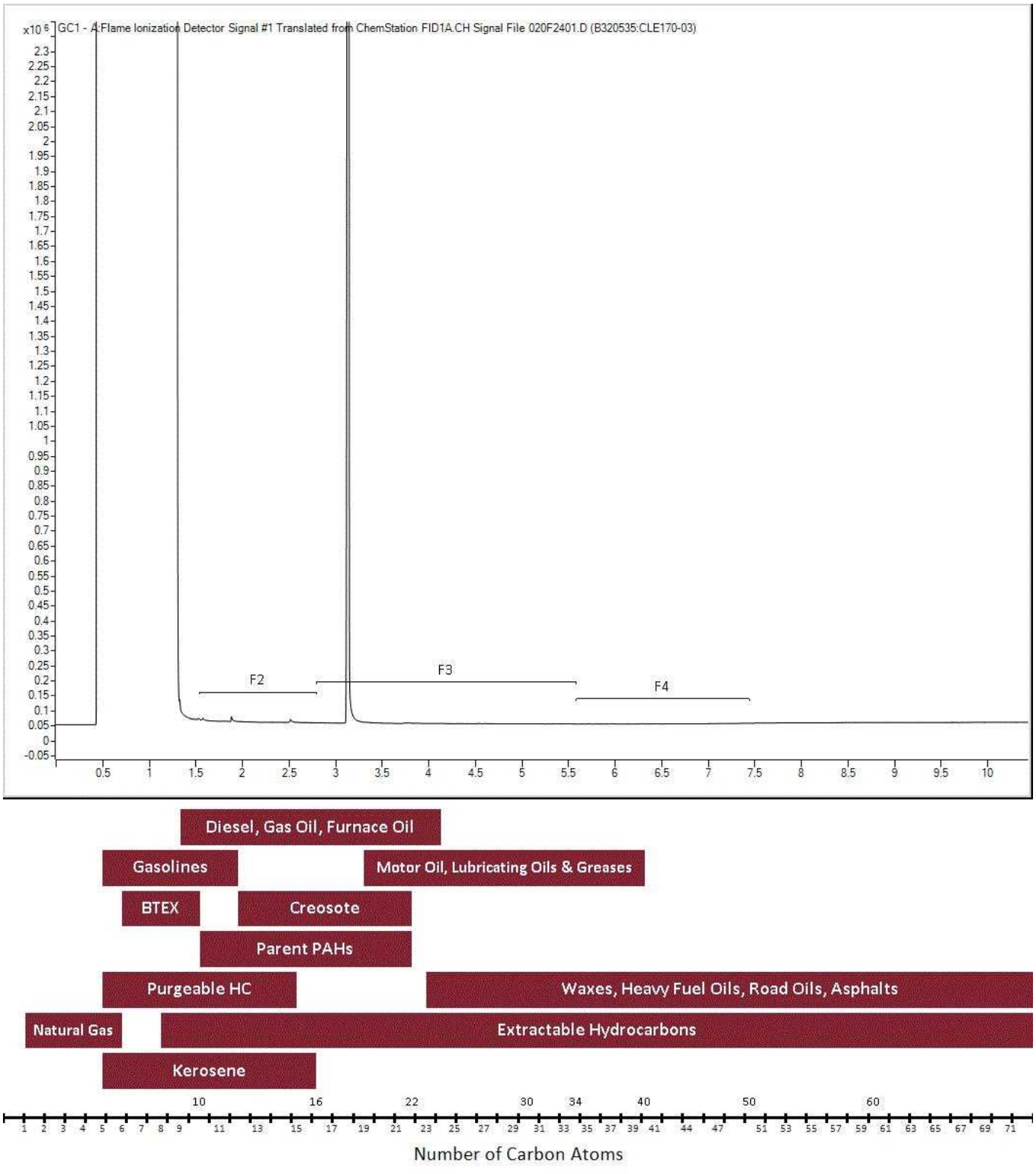
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C420365
Report Date: 2024/04/03
Bureau Veritas Sample: CLE170

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DS-03

CCME Hydrocarbons (F2-F4 in water) Chromatogram

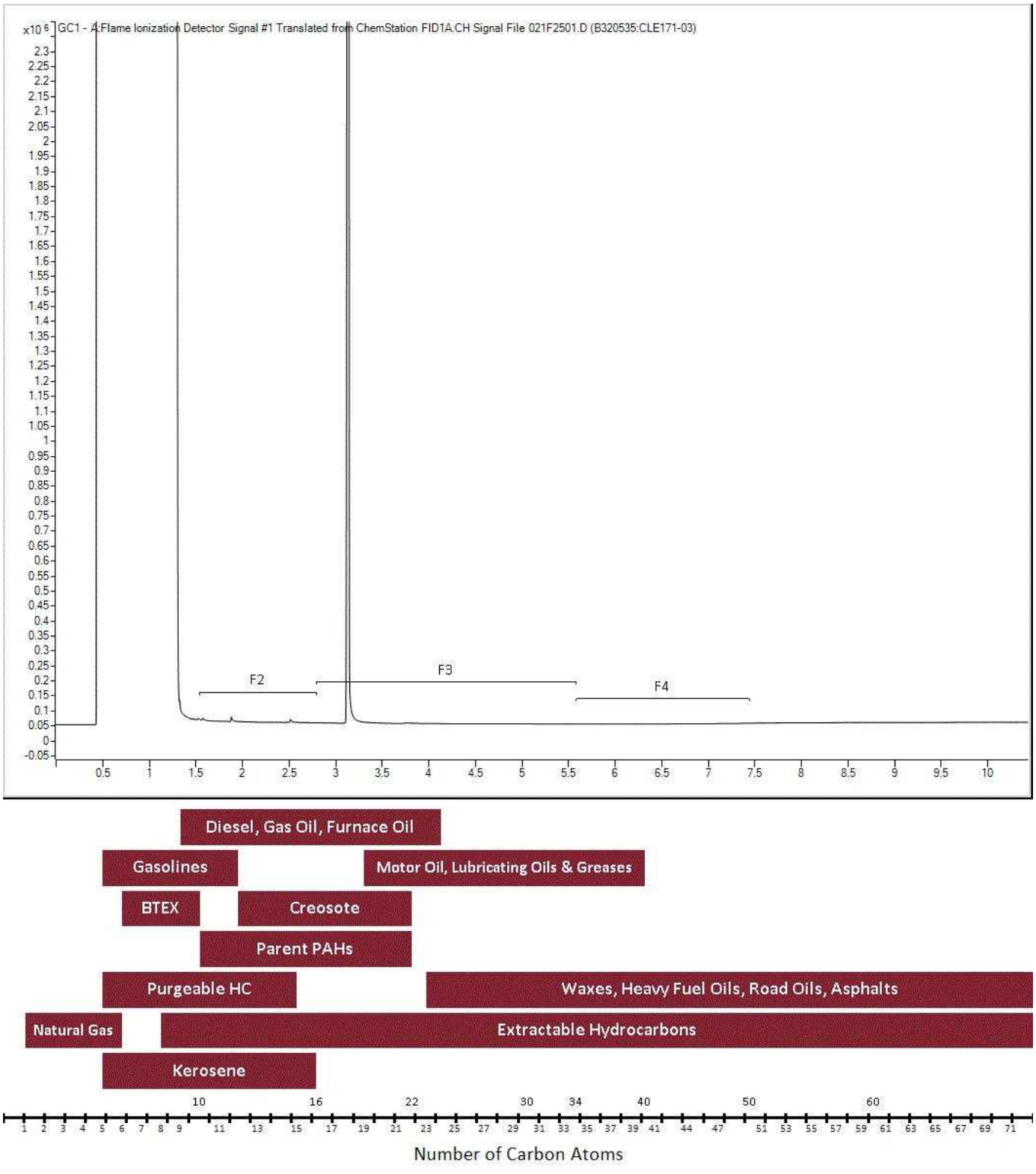


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C420365
Report Date: 2024/04/03
Bureau Veritas Sample: CLE171

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DS-02

CCME Hydrocarbons (F2-F4 in water) Chromatogram



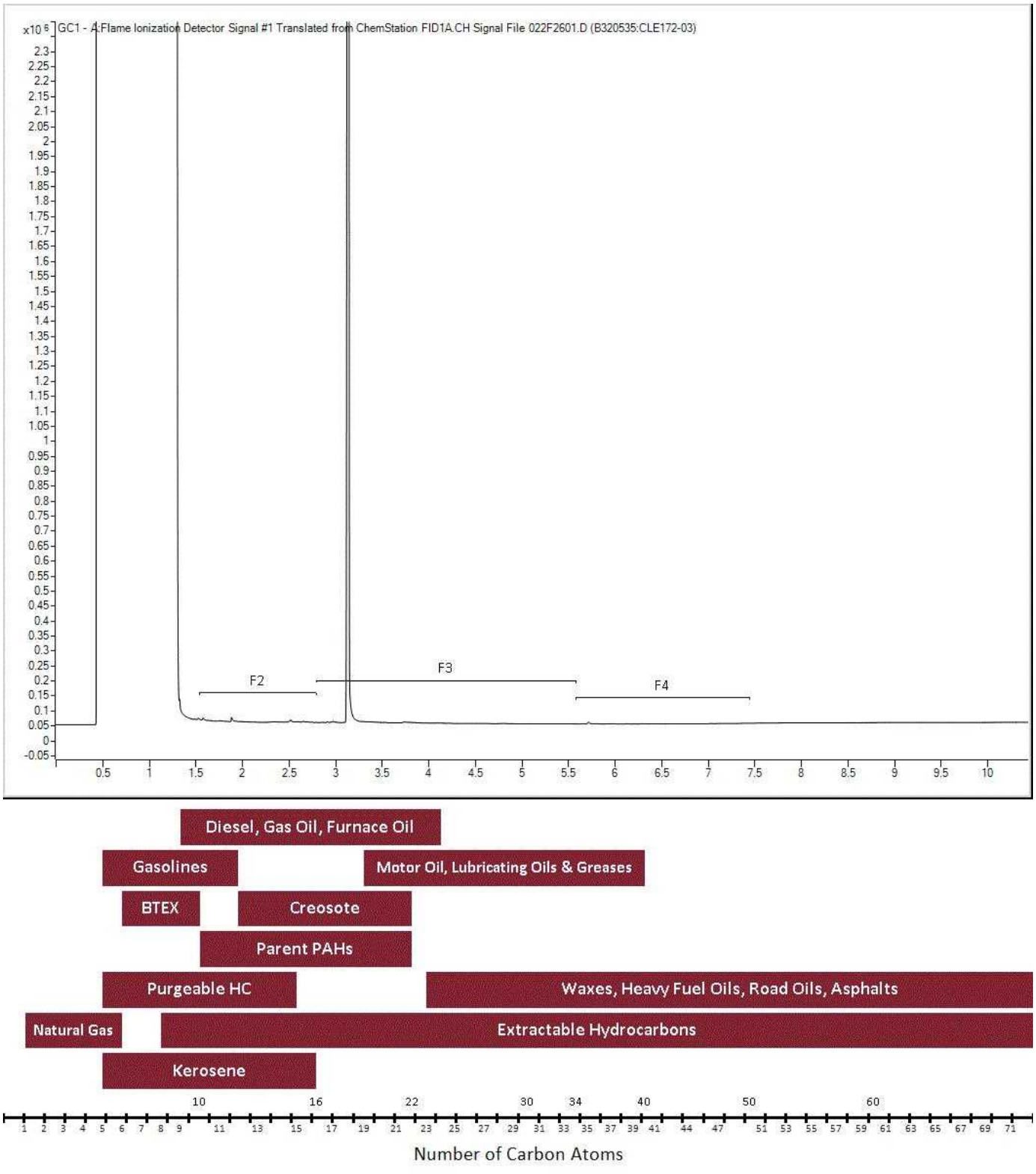
hpchem12\HPchem\1\DATA\2024\03\RUN0324

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

Bureau Veritas Job #: C420365
Report Date: 2024/04/03
Bureau Veritas Sample: CLE172

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DUP3-FIELD BLANK

CCME Hydrocarbons (F2-F4 in water) Chromatogram



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

Maxxam
A Bureau Veritas Group Company

Calgary
4000 19th St. NE, T2E 6P8
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411

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

AIC

Page 1 of 1

C of C # 299618

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: ~~Maxxam~~ Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@~~maxxam~~worley.com	Email: alex.haigh@~~maxxam~~worley.com
Ph: 587-897-6249	Ph: 587-897-6249
Sampler Name (Print): Alex Haigh / Stacy Gibb	Consultant Project #: 417085-49223-23200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1	AEMP-DS-03		X			18	2024/03/18	13:20	X	
2	AEMP-DS-02		X			18	2024/03/18	14:20	X	
3	AEMP-Dup 3-Field Blank				X	8	2024/03/18	16:00		
4										
5										
6										
7										
8										
9										
10										

ANALYSIS REQUESTED

	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS ☒ TOT ☐ DIS	MERCURY ☐ TOTAL ☒ DISSOLVED	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	Oil & Grease	TOC, DOC, COD, Sulphide	Nitrate, Nitrite, Ammonia (Total), TKN	Orthophosphate	Sulphur - Total & Dissolved	Alkylated PAHs, TPH	Headspace in BTEX
1		X		X						X	X					X			X	X	X	X	X	X	X	X
2		X		X						X	X					X			X	X	X	X	X	X	X	X
3		X		X																X					X	

IOL SITE LOCATION	Norman Wells, NT
IOL PROJECT # (if applicable)	N/A
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM	417085-49233-23200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS
email canada.chemistry@worley.com
cacal-ior data track@worley.com
stacy.gibb@worley.com
JES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	4	3	2
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID # MCAL			
SEAL PRESENT	✓		TEMP °C	2	2	1
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C420365

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1. Alex Haigh	2024/03/20	10:00	1. DEJI WU	2024/03/22	13:38
2. DEJI WU	2024/03/22	16:00	2. SEAN ENZ	2024/03/23	07:00
3.			3.		

SAMPLES
LABELED BY: DW
VERIFIED BY: AZE

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299613

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/03
Report #: R3482840
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C420367
Received: 2024/03/22, 13:38

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	3	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	3		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons (F2-F4 in water) (1, 3)	3	AB SOP-00037	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease (Gravimetric, n-Hexane) (1)	3	AB SOP-00092	SM 23 5520B/5520F m
Target & Alkylated PAH in Water by GC/MS (1, 5)	3	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	3		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299613

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/03
Report #: R3482840
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C420367
Received: 2024/03/22, 13:38

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	3	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223
Your C.O.C. #: 299613

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/04/03
Report #: R3482840
Version: 2 - Final

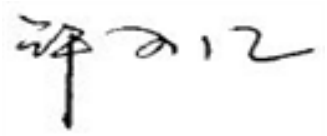
CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C420367

Received: 2024/03/22, 13:38

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



Mary (Xiaohong) Xu
Customer Solutions Representative
03 Apr 2024 17:22:48

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

AT1 BTEX AND F1-F4 IN WATER (WATER)

Bureau Veritas ID		CLE179	CLE180	CLE181		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45	2024/03/18 13:00		
COC Number		299613	299613	299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**AEMP-DUP4-TRIP BLANK**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	0.10	B320535
F3 (C16-C34 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	0.10	B320535
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	0.20	B320535
Volatiles						
Benzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B321334
Toluene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B321334
Ethylbenzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B321334
m & p-Xylene	mg/L	<0.00080	<0.00080	<0.00080	0.00080	B321334
o-Xylene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B321334
Xylenes (Total)	mg/L	<0.00089	<0.00089	<0.00089	0.00089	B320320
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	<0.10	0.10	B320320
F1 (C6-C10)	mg/L	<0.10	<0.10	<0.10	0.10	B321334
Extraction Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	104	107	104		B320535
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	104	104	104		B321334
4-Bromofluorobenzene (sur.)	%	99	95	96		B321334
D4-1,2-Dichloroethane (sur.)	%	99	100	101		B321334
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CLE179	CLE180		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45		
COC Number		299613	299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.097	0.12	0.020	B322528
Nutrients					
Total Nitrogen (N)	mg/L	0.30	0.31	0.020	B323278
RDL = Reportable Detection Limit					

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Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CLE179	CLE180			CLE180		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45			2024/03/18 11:45		
COC Number		299613	299613			299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**RDL**	**QC Batch**	**AEMP-DUP 1 Lab-Dup**	**RDL**	**QC Batch**
Elements								
Total Cadmium (Cd)	mg/L	0.000025	0.000021	0.000020	B319999			
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B324912			
Total Aluminum (Al)	mg/L	0.023	0.026	0.0030	B324047	0.022	0.0030	B324047
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B324047	<0.00060	0.00060	B324047
Total Arsenic (As)	mg/L	0.00037	0.00032	0.00020	B324047	0.00030	0.00020	B324047
Total Barium (Ba)	mg/L	0.042	0.040	0.010	B324062	0.041	0.010	B324062
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B324047	<0.0010	0.0010	B324047
Total Boron (B)	mg/L	<0.020	<0.020	0.020	B324062	<0.020	0.020	B324062
Total Calcium (Ca)	mg/L	30	29	0.30	B324062	29	0.30	B324062
Total Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B324047	<0.0010	0.0010	B324047
Total Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B324047	<0.00030	0.00030	B324047
Total Copper (Cu)	mg/L	<0.0010	<0.0010	0.0010	B324047	<0.0010	0.0010	B324047
Total Iron (Fe)	mg/L	<0.060	<0.060	0.060	B324062	<0.060	0.060	B324062
Total Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B324047	<0.00020	0.00020	B324047
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B324062	<0.020	0.020	B324062
Total Magnesium (Mg)	mg/L	9.6	9.2	0.20	B324062	9.5	0.20	B324062
Total Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B324062	<0.0040	0.0040	B324062
Total Molybdenum (Mo)	mg/L	0.00084	0.00085	0.00020	B324047	0.00083	0.00020	B324047
Total Nickel (Ni)	mg/L	0.0010	0.0013	0.00050	B324047	0.0012	0.00050	B324047
Total Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B324062	<0.10	0.10	B324062
Total Potassium (K)	mg/L	0.91	0.89	0.30	B324062	0.91	0.30	B324062
Total Selenium (Se)	mg/L	0.00021	0.00021	0.00020	B324047	<0.00020	0.00020	B324047
Total Silicon (Si)	mg/L	1.8	1.6	0.50	B324062	1.7	0.50	B324062
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B324047	<0.00010	0.00010	B324047
Total Sodium (Na)	mg/L	9.6	9.4	0.50	B324062	9.6	0.50	B324062
Total Strontium (Sr)	mg/L	0.23	0.22	0.020	B324062	0.22	0.020	B324062
Total Sulphur (S)	mg/L	10	10	0.20	B324062	10	0.20	B324062
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B324047	<0.00020	0.00020	B324047
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B324047	<0.0010	0.0010	B324047

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CLE179	CLE180			CLE180		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45			2024/03/18 11:45		
COC Number		299613	299613			299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**RDL**	**QC Batch**	**AEMP-DUP 1 Lab-Dup**	**RDL**	**QC Batch**
Total Titanium (Ti)	mg/L	<0.0010	0.0024	0.0010	B324047	<0.0010	0.0010	B324047
Total Uranium (U)	mg/L	0.00068	0.00070	0.00010	B324047	0.00064	0.00010	B324047
Total Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B324047	<0.0010	0.0010	B324047
Total Zinc (Zn)	mg/L	0.0055	0.0039	0.0030	B324047	0.0040	0.0030	B324047

RDL = Reportable Detection Limit
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Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLE179	CLE180			CLE181		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45			2024/03/18 13:00		
COC Number		299613	299613			299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**RDL**	**QC Batch**	**AEMP-DUP4-TRIP BLANK**	**RDL**	**QC Batch**
Calculated Parameters								
Hardness (CaCO3)	mg/L	110	110	0.50	B320903			
Ion Balance (% Difference)	%	2.8	2.9	N/A	B320328			
Nitrate (N)	mg/L	0.20	0.19	0.010	B320476			
Nitrate (NO3)	mg/L	0.90	0.84	0.044	B322527			
Nitrite (NO2)	mg/L	<0.033	<0.033	0.033	B322527			
Sulphide (as H2S)	mg/L	<0.0020	<0.0020	0.0020	B320587			
Demand Parameters								
Chemical Oxygen Demand	mg/L	15	<10 (1)	10	B322696			
Elements								
Dissolved Cadmium (Cd)	mg/L	<0.000020	<0.000020	0.000020	B319997			
Misc. Inorganics								
Conductivity	uS/cm	270	270	2.0	B323251			
Dissolved Organic Carbon (C)	mg/L	3.0	3.2	0.50	B323356			
pH	pH	8.02	8.00	N/A	B323246			
Total Organic Carbon (C)	mg/L	2.8	2.8	0.50	B323357			
Total Dissolved Solids	mg/L	160	160	10	B321034			
Total Suspended Solids	mg/L	<1.0	<1.0	1.0	B321032			
Anions								
Alkalinity (PP as CaCO3)	mg/L	<1.0	<1.0	1.0	B323239			
Alkalinity (Total as CaCO3)	mg/L	86	85	1.0	B323239			
Bicarbonate (HCO3)	mg/L	100	100	1.0	B323239			
Carbonate (CO3)	mg/L	<1.0	<1.0	1.0	B323239			
Hydroxide (OH)	mg/L	<1.0	<1.0	1.0	B323239			
Total Sulphide	mg/L	<0.0018	<0.0018	0.0018	B321391			
Chloride (Cl)	mg/L	14	14	1.0	B323082			
Sulphate (SO4)	mg/L	35	35	1.0	B323082			
Nutrients								
Total Ammonia (N)	mg/L	<0.015	<0.015	0.015	B322246			

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CLE179	CLE180			CLE181		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45			2024/03/18 13:00		
COC Number		299613	299613			299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**RDL**	**QC Batch**	**AEMP-DUP4-TRIP BLANK**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	<0.0030	0.0030	B323492			
Nitrite (N)	mg/L	<0.010	<0.010	0.010	B322996			
Nitrate plus Nitrite (N)	mg/L	0.20	0.19	0.010	B322996			
Misc. Organics								
Total Oil and grease	mg/L	6.0	7.0	2.0	B320520	<2.0	2.0	B320520
Total Petroleum Hydrocarbon	mg/L	<2.0	<2.0	2.0	B323522	<2.0	2.0	B323522
Physical Properties								
True Colour	PtCo units	2.6	4.3	2.0	B323520			
Physical Properties								
Turbidity	NTU	1.5	1.8	0.10	B321131			
RDL = Reportable Detection Limit								

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLE179	CLE180	CLE181		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45	2024/03/18 13:00		
COC Number		299613	299613	299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**AEMP-DUP4-TRIP BLANK**	**RDL**	**QC Batch**
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	<0.000010	0.000010	B320905
Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Acridine	ug/L	<0.040	<0.040	<0.040	0.040	B319712
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	B319712
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
Fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	B319712
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Perylene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
Quinoline	ug/L	<0.20	<0.20	<0.20	0.20	B319712
Retene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C1-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
C3-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
C4-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
C2-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B319712
RDL = Reportable Detection Limit						

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CLE179	CLE180	CLE181		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45	2024/03/18 13:00		
COC Number		299613	299613	299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**AEMP-DUP4-TRIP BLANK**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C2-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C3-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
Dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C2-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C3-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C4-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B319712
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B319712
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B319712
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B319712
C1-Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
1-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B319712
Extraction Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	115	92	118		B319712
D8-ACENAPHTHYLENE (sur.)	%	102	81	102		B319712
D8-NAPHTHALENE (sur.)	%	100	79	98		B319712
TERPHENYL-D14 (sur.)	%	131 (1)	105	132 (1)		B319712

RDL = Reportable Detection Limit

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

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CLE179	CLE180		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45		
COC Number		299613	299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B325437
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CLE179	CLE180		
Sampling Date		2024/03/18 11:45	2024/03/18 11:45		
COC Number		299613	299613		
	UNITS	**AEMP-DS-04**	**AEMP-DUP 1**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	<0.0030	<0.0030	0.0030	B323308
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B323308
Dissolved Arsenic (As)	mg/L	<0.00020	0.00020	0.00020	B323308
Dissolved Barium (Ba)	mg/L	0.040	0.039	0.010	B322755
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B322755
Dissolved Calcium (Ca)	mg/L	29	29	0.30	B322755
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B323308
Dissolved Copper (Cu)	mg/L	0.0011	<0.0010	0.0010	B323308
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B322755
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B323308
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	B322755
Dissolved Magnesium (Mg)	mg/L	9.5	9.5	0.20	B322755
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B322755
Dissolved Molybdenum (Mo)	mg/L	0.00061	0.00057	0.00020	B323308
Dissolved Nickel (Ni)	mg/L	0.00069	0.00061	0.00050	B323308
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B322755
Dissolved Potassium (K)	mg/L	0.93	0.99	0.30	B322755
Dissolved Selenium (Se)	mg/L	<0.00020	<0.00020	0.00020	B323308
Dissolved Silicon (Si)	mg/L	1.6	1.6	0.50	B322755
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B323308
Dissolved Sodium (Na)	mg/L	9.5	9.6	0.50	B322755
Dissolved Strontium (Sr)	mg/L	0.22	0.22	0.020	B322755
Dissolved Sulphur (S)	mg/L	10	11	0.20	B322755
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B323308
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Uranium (U)	mg/L	0.00049	0.00046	0.00010	B323308
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B323308
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B323308
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLE179
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B323239	N/A	2024/03/26	Ayesha Shakoor
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B321334	N/A	2024/03/25	Raheela Sahar
F1-BTEX	CALC/MS	B320320	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B319997	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B319999	N/A	2024/03/28	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B323082	N/A	2024/03/26	Shanna McKort
COD by Colorimeter	M/PROB	B322696	N/A	2024/03/26	Amy Phan
True Colour	SPEC/COL	B323520	N/A	2024/03/26	Shanna McKort
Carbon (DOC)	TECH	B323356	N/A	2024/03/27	Ye Hyun KIM
Conductivity @25C	COND	B323251	N/A	2024/03/26	Ayesha Shakoor
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B320535	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B320587	N/A	2024/03/25	Automated Statchk
Hardness	CALC	B320903	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B325437	2024/03/27	2024/04/02	Mandeep Kaur - 1
Mercury (Total) by CV	CV	B324912	2024/03/27	2024/03/28	Meet Patel
Elements by ICP - Dissolved	ICPA	B322755	N/A	2024/03/26	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B324062	2024/03/27	2024/03/27	Sarah Dolan
Elements by ICPMS - Dissolved	ICPM	B323308	N/A	2024/03/27	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B324047	2024/03/27	2024/03/27	Kristijan Kovac
Ion Balance	CALC	B320328	N/A	2024/03/27	Automated Statchk
Ammonia-N (Total)	KONE	B322246	N/A	2024/03/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B322527	N/A	2024/03/27	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B322996	N/A	2024/03/26	Adam Fishleigh
Nitrate (as N)	CALC	B320476	2024/03/27	2024/03/27	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B320520	2024/03/28	2024/03/28	Ranak Singh
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B320905	N/A	2024/03/27	Automated Statchk
pH @25°C	AT/ALK	B323246	N/A	2024/03/26	Ayesha Shakoor
Orthophosphate by Automated Analyzer	KONE	B323492	N/A	2024/03/26	Mary Anne Dela Cruz
Total Sulphide	SPEC	B321391	N/A	2024/03/25	Bailey Morrison
Total Dissolved Solids (Filt. Residue)	BAL	B321034	2024/03/23	2024/03/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B322528	N/A	2024/03/27	Automated Statchk
Nitrogen (Total)	AC/COL	B323278	2024/03/26	2024/03/27	Carlo Truong
Carbon (Total Organic)	TECH	B323357	N/A	2024/03/27	Ye Hyun KIM
Hydrocarbon by IR (Mineral oil & grease)	IR	B323522	2024/03/27	2024/03/28	Chuhan Huang
Total Suspended Solids (NFR)	BAL	B321032	2024/03/23	2024/03/25	Daryl Viktoria Noval
Turbidity	TURB	B321131	N/A	2024/03/23	Daryl Viktoria Noval

Bureau Veritas ID: CLE180
Sample ID: AEMP-DUP 1
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B323239	N/A	2024/03/26	Ayesha Shakoor

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Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLE180
Sample ID: AEMP-DUP 1
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B321334	N/A	2024/03/25	Raheela Sahar
F1-BTEX	CALC/MS	B320320	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B319997	N/A	2024/03/27	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B319999	N/A	2024/03/28	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B323082	N/A	2024/03/26	Shanna McKort
COD by Colorimeter	M/PROB	B322696	N/A	2024/03/26	Amy Phan
True Colour	SPEC/COL	B323520	N/A	2024/03/26	Shanna McKort
Carbon (DOC)	TECH	B323356	N/A	2024/03/27	Ye Hyun KIM
Conductivity @25C	COND	B323251	N/A	2024/03/26	Ayesha Shakoor
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B320535	2024/03/24	2024/03/24	Bryanna Quach
Sulphide (as H2S)	CALC	B320587	N/A	2024/03/25	Automated Statchk
Hardness	CALC	B320903	N/A	2024/03/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B325437	2024/03/27	2024/04/02	Mandeep Kaur - 1
Mercury (Total) by CV	CV	B324912	2024/03/27	2024/03/28	Meet Patel
Elements by ICP - Dissolved	ICPA	B322755	N/A	2024/03/26	Hue Quyen Vuong
Elements by ICP - Total	ICPA	B324062	2024/03/27	2024/03/27	Sarah Dolan
Elements by ICPMS - Dissolved	ICPM	B323308	N/A	2024/03/27	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B324047	2024/03/27	2024/03/27	Kristijan Kovac
Ion Balance	CALC	B320328	N/A	2024/03/27	Automated Statchk
Ammonia-N (Total)	KONE	B322246	N/A	2024/03/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B322527	N/A	2024/03/27	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B322996	N/A	2024/03/26	Adam Fishleigh
Nitrate (as N)	CALC	B320476	2024/03/27	2024/03/27	Automated Statchk
Oil and Grease (Gravimetric, n-Hexane)	CALC	B320520	2024/03/28	2024/03/28	Ranak Singh
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B320905	N/A	2024/03/27	Automated Statchk
pH @25°C	AT/ALK	B323246	N/A	2024/03/26	Ayesha Shakoor
Orthophosphate by Automated Analyzer	KONE	B323492	N/A	2024/03/26	Mary Anne Dela Cruz
Total Sulphide	SPEC	B321391	N/A	2024/03/25	Bailey Morrison
Total Dissolved Solids (Filt. Residue)	BAL	B321034	2024/03/23	2024/03/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B322528	N/A	2024/03/27	Automated Statchk
Nitrogen (Total)	AC/COL	B323278	2024/03/26	2024/03/27	Carlo Truong
Carbon (Total Organic)	TECH	B323357	N/A	2024/03/27	Ye Hyun KIM
Hydrocarbon by IR (Mineral oil & grease)	IR	B323522	2024/03/27	2024/03/28	Chuhan Huang
Total Suspended Solids (NFR)	BAL	B321032	2024/03/23	2024/03/25	Daryl Viktoria Noval
Turbidity	TURB	B321131	N/A	2024/03/23	Daryl Viktoria Noval

Bureau Veritas ID: CLE180 Dup
Sample ID: AEMP-DUP 1
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Elements by ICP - Total	ICPA	B324062	2024/03/27	2024/03/27	Sarah Dolan
Elements by ICPMS - Total	ICPM	B324047	2024/03/27	2024/03/27	Kristijan Kovac

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Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

TEST SUMMARY

Bureau Veritas ID: CLE181
Sample ID: AEMP-DUP4-TRIP BLANK
Matrix: Water

Collected: 2024/03/18
Relinquished: 2024/03/20
Received: 2024/03/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B321334	N/A	2024/03/25	Raheela Sahar
F1-BTEX	CALC/MS	B320320	N/A	2024/03/27	Automated Statchk
CCME Hydrocarbons (F2-F4 in water)	GC/FID	B320535	2024/03/24	2024/03/24	Bryanna Quach
Oil and Grease (Gravimetric, n-Hexane)	CALC	B320520	2024/03/28	2024/03/28	Ranak Singh
Target & Alkylated PAH in Water by GC/MS	GC/MS	B319712	2024/03/24	2024/03/24	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B320905	N/A	2024/03/27	Automated Statchk
Hydrocarbon by IR (Mineral oil & grease)	IR	B323522	2024/03/27	2024/03/28	Chuhan Huang

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GENERAL COMMENTS

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

Package 1	2.0°C

Temperatures upon receipt at Bureau Veritas Labs Calgary
Package 1: 2.0 degrees C
Each temperature is the average of up to three cooler temperatures taken at receipt.

Sample CLE179 [AEMP-DS-04] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for True Colour.

Sample CLE180 [AEMP-DUP 1] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for True Colour.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B319712	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/03/24		102	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		116	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		83	%	50 - 130
			Acenaphthene	2024/03/24	<0.10		ug/L	
			Acenaphthylene	2024/03/24	<0.10		ug/L	
			Acridine	2024/03/24	<0.040		ug/L	
			Anthracene	2024/03/24	<0.010		ug/L	
			Benzo(a)anthracene	2024/03/24	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/03/24	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/03/24	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/03/24	<0.050		ug/L	
			Benzo(a)pyrene	2024/03/24	<0.0075		ug/L	
			Benzo(e)pyrene	2024/03/24	<0.050		ug/L	
			Chrysene	2024/03/24	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/03/24	<0.0075		ug/L	
			Fluoranthene	2024/03/24	<0.010		ug/L	
			Fluorene	2024/03/24	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/03/24	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/03/24	<0.0085		ug/L	
			2-Methylnaphthalene	2024/03/24	<0.10		ug/L	
			Naphthalene	2024/03/24	<0.10		ug/L	
			Phenanthrene	2024/03/24	<0.050		ug/L	
			Perylene	2024/03/24	<0.050		ug/L	
			Pyrene	2024/03/24	<0.020		ug/L	
			Quinoline	2024/03/24	<0.20		ug/L	
			Retene	2024/03/24	<0.050		ug/L	
			C1-Naphthalene	2024/03/24	<0.10		ug/L	
			C3-Naphthalene	2024/03/24	<0.10		ug/L	
			C4-Naphthalene	2024/03/24	<0.10		ug/L	
			C2-Naphthalene	2024/03/24	<0.10		ug/L	
			Biphenyl	2024/03/24	<0.020		ug/L	
			C1-biphenyl	2024/03/24	<0.020		ug/L	
			C2-biphenyl	2024/03/24	<0.020		ug/L	
			C1-fluorene	2024/03/24	<0.050		ug/L	
			C2-fluorene	2024/03/24	<0.050		ug/L	
			C3-fluorene	2024/03/24	<0.050		ug/L	
			Dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C2-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C3-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C4-dibenzothiophene	2024/03/24	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/03/24	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/03/24	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/03/24	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/03/24	<0.0075		ug/L	
			C1-Acenaphthene	2024/03/24	<0.10		ug/L	
			1-Methylnaphthalene	2024/03/24	<0.10		ug/L	
B320520	RSX	Method Blank	Total Oil and grease	2024/03/28	<2.0		mg/L	
B320535	BQU	Method Blank	O-TERPHENYL (sur.)	2024/03/24		108	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24	<0.10		mg/L	
			F3 (C16-C34 Hydrocarbons)	2024/03/24	<0.10		mg/L	
			F4 (C34-C50 Hydrocarbons)	2024/03/24	<0.20		mg/L	
B321032	DVN	Method Blank	Total Suspended Solids	2024/03/25	<1.0		mg/L	
B321034	DVN	Method Blank	Total Dissolved Solids	2024/03/25	<10		mg/L	
B321131	DVN	Method Blank	Turbidity	2024/03/23	<0.10		NTU	
B321334	RSA	Method Blank	1,4-Difluorobenzene (sur.)	2024/03/25		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/25		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/25		101	%	50 - 140
			Benzene	2024/03/25	<0.00040		mg/L	
			Toluene	2024/03/25	<0.00040		mg/L	
			Ethylbenzene	2024/03/25	<0.00040		mg/L	
			m & p-Xylene	2024/03/25	<0.00080		mg/L	
			o-Xylene	2024/03/25	<0.00040		mg/L	
			F1 (C6-C10)	2024/03/25	<0.10		mg/L	
B321391	BYM	Method Blank	Total Sulphide	2024/03/25	<0.0018		mg/L	
B322246	AFI	Method Blank	Total Ammonia (N)	2024/03/25	<0.015		mg/L	
B322696	AP1	Method Blank	Chemical Oxygen Demand	2024/03/26	<10		mg/L	
B322755	HQV	Method Blank	Dissolved Iron (Fe)	2024/03/26	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/03/26	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/03/26	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/03/26	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/03/26	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/03/26	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/03/26	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/03/26	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/03/26	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/03/26	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/03/26	<0.50		mg/L	
			Dissolved Boron (B)	2024/03/26	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/03/26	<0.30		mg/L	
B322996	AFI	Method Blank	Nitrite (N)	2024/03/26	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/03/26	<0.010		mg/L	
B323082	SKM	Method Blank	Chloride (Cl)	2024/03/26	<1.0		mg/L	
			Sulphate (SO4)	2024/03/26	<1.0		mg/L	
B323239	A5S	Method Blank	Alkalinity (Total as CaCO3)	2024/03/26	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/03/26	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/03/26	<1.0		mg/L	
			Carbonate (CO3)	2024/03/26	<1.0		mg/L	
			Hydroxide (OH)	2024/03/26	<1.0		mg/L	
B323251	A5S	Method Blank	Conductivity	2024/03/26	<2.0		uS/cm	
B323278	CTU	Method Blank	Total Nitrogen (N)	2024/03/27	<0.020		mg/L	
B323308	KKC	Method Blank	Dissolved Aluminum (Al)	2024/03/27	<0.0030		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Chromium (Cr)	2024/03/27	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/03/27	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/03/27	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/03/27	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/03/27	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/03/27	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/03/27	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/03/27	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/03/27	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/03/27	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/03/27	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/03/27	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/03/27	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/03/27	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/03/27	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/03/27	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/03/27	<0.0010		mg/L	
B323356	YHK	Method Blank	Dissolved Organic Carbon (C)	2024/03/27	<0.50		mg/L	
B323357	YHK	Method Blank	Total Organic Carbon (C)	2024/03/27	<0.50		mg/L	
B323492	MAP	Method Blank	Orthophosphate (P)	2024/03/26	<0.0030		mg/L	
B323520	SKM	Method Blank	True Colour	2024/03/26	<2.0		PtCo units	
B323522	CHA	Method Blank	Total Petroleum Hydrocarbon	2024/03/28	<2.0		mg/L	
B324047	KKC	Method Blank	Total Aluminum (Al)	2024/03/27	<0.0030		mg/L	
			Total Chromium (Cr)	2024/03/27	<0.0010		mg/L	
			Total Cobalt (Co)	2024/03/27	<0.00030		mg/L	
			Total Copper (Cu)	2024/03/27	<0.0010		mg/L	
			Total Lead (Pb)	2024/03/27	<0.00020		mg/L	
			Total Antimony (Sb)	2024/03/27	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/03/27	<0.00020		mg/L	
			Total Nickel (Ni)	2024/03/27	<0.00050		mg/L	
			Total Selenium (Se)	2024/03/27	<0.00020		mg/L	
			Total Silver (Ag)	2024/03/27	<0.00010		mg/L	
			Total Arsenic (As)	2024/03/27	<0.00020		mg/L	
			Total Thallium (Tl)	2024/03/27	<0.00020		mg/L	
			Total Tin (Sn)	2024/03/27	<0.0010		mg/L	
			Total Titanium (Ti)	2024/03/27	<0.0010		mg/L	
			Total Uranium (U)	2024/03/27	<0.00010		mg/L	
			Total Vanadium (V)	2024/03/27	<0.0010		mg/L	
			Total Zinc (Zn)	2024/03/27	<0.0030		mg/L	
			Total Beryllium (Be)	2024/03/27	<0.0010		mg/L	
B324062	S1D	Method Blank	Total Iron (Fe)	2024/03/27	<0.060		mg/L	
			Total Lithium (Li)	2024/03/27	<0.020		mg/L	
			Total Magnesium (Mg)	2024/03/27	<0.20		mg/L	
			Total Manganese (Mn)	2024/03/27	<0.0040		mg/L	
			Total Potassium (K)	2024/03/27	<0.30		mg/L	
			Total Sodium (Na)	2024/03/27	<0.50		mg/L	
			Total Strontium (Sr)	2024/03/27	<0.020		mg/L	
			Total Sulphur (S)	2024/03/27	<0.20		mg/L	
			Total Phosphorus (P)	2024/03/27	<0.10		mg/L	
			Total Barium (Ba)	2024/03/27	<0.010		mg/L	
			Total Silicon (Si)	2024/03/27	<0.50		mg/L	
			Total Boron (B)	2024/03/27	<0.020		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Calcium (Ca)	2024/03/27	<0.30		mg/L	
B324912	MPK	Method Blank	Total Mercury (Hg)	2024/03/28	<0.0019		ug/L	
B325437	MKJ	Method Blank	Dissolved Mercury (Hg)	2024/03/28	<0.0019		ug/L	
B324047	KKC	RPD [CLE180-07]	Total Aluminum (Al)	2024/03/27	15		%	20
			Total Chromium (Cr)	2024/03/27	NC		%	20
			Total Cobalt (Co)	2024/03/27	NC		%	20
			Total Copper (Cu)	2024/03/27	NC		%	20
			Total Lead (Pb)	2024/03/27	NC		%	20
			Total Antimony (Sb)	2024/03/27	NC		%	20
			Total Molybdenum (Mo)	2024/03/27	2.3		%	20
			Total Nickel (Ni)	2024/03/27	2.3		%	20
			Total Selenium (Se)	2024/03/27	7.0		%	20
			Total Silver (Ag)	2024/03/27	NC		%	20
			Total Arsenic (As)	2024/03/27	6.5		%	20
			Total Thallium (Tl)	2024/03/27	NC		%	20
			Total Tin (Sn)	2024/03/27	NC		%	20
			Total Titanium (Ti)	2024/03/27	NC		%	20
			Total Uranium (U)	2024/03/27	8.5		%	20
			Total Vanadium (V)	2024/03/27	NC		%	20
			Total Zinc (Zn)	2024/03/27	2.2		%	20
			Total Beryllium (Be)	2024/03/27	NC		%	20
B324062	S1D	RPD [CLE180-07]	Total Iron (Fe)	2024/03/27	NC		%	20
			Total Lithium (Li)	2024/03/27	NC		%	20
			Total Magnesium (Mg)	2024/03/27	2.9		%	20
			Total Manganese (Mn)	2024/03/27	NC		%	20
			Total Potassium (K)	2024/03/27	2.1		%	20
			Total Sodium (Na)	2024/03/27	1.5		%	20
			Total Strontium (Sr)	2024/03/27	0.71		%	20
			Total Sulphur (S)	2024/03/27	3.6		%	20
			Total Phosphorus (P)	2024/03/27	NC		%	20
			Total Barium (Ba)	2024/03/27	2.2		%	20
			Total Silicon (Si)	2024/03/27	2.9		%	20
			Total Boron (B)	2024/03/27	NC		%	20
			Total Calcium (Ca)	2024/03/27	2.0		%	20
B324047	KKC	Matrix Spike [CLE179-07]	Total Aluminum (Al)	2024/03/28		108	%	80 - 120
			Total Chromium (Cr)	2024/03/28		109	%	80 - 120
			Total Cobalt (Co)	2024/03/28		109	%	80 - 120
			Total Copper (Cu)	2024/03/28		108	%	80 - 120
			Total Lead (Pb)	2024/03/28		109	%	80 - 120
			Total Antimony (Sb)	2024/03/28		110	%	80 - 120
			Total Molybdenum (Mo)	2024/03/28		112	%	80 - 120
			Total Nickel (Ni)	2024/03/28		108	%	80 - 120
			Total Selenium (Se)	2024/03/28		104	%	80 - 120
			Total Silver (Ag)	2024/03/28		109	%	80 - 120
			Total Arsenic (As)	2024/03/28		107	%	80 - 120
			Total Thallium (Tl)	2024/03/28		111	%	80 - 120
			Total Tin (Sn)	2024/03/28		110	%	80 - 120
			Total Titanium (Ti)	2024/03/28		109	%	80 - 120
			Total Uranium (U)	2024/03/28		111	%	80 - 120
			Total Vanadium (V)	2024/03/28		108	%	80 - 120
			Total Zinc (Zn)	2024/03/28		103	%	80 - 120
			Total Beryllium (Be)	2024/03/28		106	%	80 - 120

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B319712	JC7	LCS	D10-ANTHRACENE (sur.)	2024/03/24		105	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/03/24		123	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/03/24		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/03/24		78	%	50 - 130
			Acenaphthene	2024/03/24		102	%	50 - 130
			Acenaphthylene	2024/03/24		100	%	50 - 130
			Acridine	2024/03/24		80	%	50 - 130
			Anthracene	2024/03/24		84	%	50 - 130
			Benzo(a)anthracene	2024/03/24		104	%	50 - 130
			Benzo(b&j)fluoranthene	2024/03/24		111	%	50 - 130
			Benzo(k)fluoranthene	2024/03/24		119	%	50 - 130
			Benzo(g,h,i)perylene	2024/03/24		109	%	50 - 130
			Benzo(c)phenanthrene	2024/03/24		114	%	50 - 130
			Benzo(a)pyrene	2024/03/24		108	%	50 - 130
			Benzo(e)pyrene	2024/03/24		99	%	50 - 130
			Chrysene	2024/03/24		112	%	50 - 130
			Dibenz(a,h)anthracene	2024/03/24		118	%	50 - 130
			Fluoranthene	2024/03/24		111	%	50 - 130
			Fluorene	2024/03/24		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/03/24		108	%	50 - 130
			2-Methylnaphthalene	2024/03/24		96	%	50 - 130
			Naphthalene	2024/03/24		102	%	50 - 130
			Phenanthrene	2024/03/24		118	%	50 - 130
			Perylene	2024/03/24		103	%	50 - 130
			Pyrene	2024/03/24		114	%	50 - 130
			Quinoline	2024/03/24		104	%	50 - 130
			C1-Naphthalene	2024/03/24		85	%	50 - 130
			C3-Naphthalene	2024/03/24		101	%	50 - 130
			C2-Naphthalene	2024/03/24		100	%	50 - 130
			C1-biphenyl	2024/03/24		99	%	50 - 130
			C1 phenanthrene/anthracene	2024/03/24		114	%	50 - 130
			C2 phenanthrene/anthracene	2024/03/24		110	%	50 - 130
			C1 fluoranthene/pyrene	2024/03/24		107	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/03/24		88	%	30 - 130
			1-Methylnaphthalene	2024/03/24		85	%	50 - 130
B320520	RSX	LCS	Total Oil and grease	2024/03/28		105	%	70 - 130
B320535	BQU	LCS	O-TERPHENYL (sur.)	2024/03/24		108	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/03/24		109	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2024/03/24		105	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2024/03/24		90	%	60 - 140
B321032	DVN	LCS	Total Suspended Solids	2024/03/25		99	%	80 - 120
B321034	DVN	LCS	Total Dissolved Solids	2024/03/25		98	%	80 - 120
B321131	DVN	LCS	Turbidity	2024/03/23		101	%	80 - 120
B321334	RSA	LCS	1,4-Difluorobenzene (sur.)	2024/03/25		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/03/25		102	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/03/25		98	%	50 - 140
			Benzene	2024/03/25		90	%	60 - 130
			Toluene	2024/03/25		94	%	60 - 130
			Ethylbenzene	2024/03/25		103	%	60 - 130
			m & p-Xylene	2024/03/25		100	%	60 - 130
			o-Xylene	2024/03/25		98	%	60 - 130
			F1 (C6-C10)	2024/03/25		94	%	60 - 140

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B321391	BYM	LCS	Total Sulphide	2024/03/25		101	%	80 - 120
B322246	AFI	LCS	Total Ammonia (N)	2024/03/25		104	%	80 - 120
B322696	AP1	LCS	Chemical Oxygen Demand	2024/03/26		101	%	80 - 120
B322755	HQV	LCS	Dissolved Iron (Fe)	2024/03/26		104	%	80 - 120
			Dissolved Lithium (Li)	2024/03/26		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/03/26		103	%	80 - 120
			Dissolved Manganese (Mn)	2024/03/26		104	%	80 - 120
			Dissolved Potassium (K)	2024/03/26		101	%	80 - 120
			Dissolved Sodium (Na)	2024/03/26		99	%	80 - 120
			Dissolved Strontium (Sr)	2024/03/26		98	%	80 - 120
			Dissolved Sulphur (S)	2024/03/26		102	%	80 - 120
			Dissolved Phosphorus (P)	2024/03/26		104	%	80 - 120
			Dissolved Barium (Ba)	2024/03/26		98	%	80 - 120
			Dissolved Silicon (Si)	2024/03/26		105	%	80 - 120
			Dissolved Boron (B)	2024/03/26		96	%	80 - 120
			Dissolved Calcium (Ca)	2024/03/26		100	%	80 - 120
B322996	AFI	LCS	Nitrite (N)	2024/03/26		105	%	80 - 120
			Nitrate plus Nitrite (N)	2024/03/26		93	%	80 - 120
B323082	SKM	LCS	Chloride (Cl)	2024/03/26		109	%	80 - 120
			Sulphate (SO4)	2024/03/26		100	%	80 - 120
B323239	A5S	LCS	Alkalinity (Total as CaCO3)	2024/03/26		100	%	80 - 120
B323246	A5S	LCS	pH	2024/03/26		100	%	97 - 103
B323251	A5S	LCS	Conductivity	2024/03/26		104	%	90 - 110
B323278	CTU	LCS	Total Nitrogen (N)	2024/03/27		98	%	80 - 120
B323308	KKC	LCS	Dissolved Aluminum (Al)	2024/03/26		112	%	80 - 120
			Dissolved Chromium (Cr)	2024/03/26		96	%	80 - 120
			Dissolved Cobalt (Co)	2024/03/26		98	%	80 - 120
			Dissolved Copper (Cu)	2024/03/26		97	%	80 - 120
			Dissolved Lead (Pb)	2024/03/26		99	%	80 - 120
			Dissolved Antimony (Sb)	2024/03/26		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/03/26		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/03/26		96	%	80 - 120
			Dissolved Selenium (Se)	2024/03/26		100	%	80 - 120
			Dissolved Silver (Ag)	2024/03/26		97	%	80 - 120
			Dissolved Arsenic (As)	2024/03/26		97	%	80 - 120
			Dissolved Thallium (Tl)	2024/03/26		98	%	80 - 120
			Dissolved Tin (Sn)	2024/03/26		98	%	80 - 120
			Dissolved Titanium (Ti)	2024/03/26		99	%	80 - 120
			Dissolved Uranium (U)	2024/03/26		93	%	80 - 120
			Dissolved Vanadium (V)	2024/03/26		97	%	80 - 120
			Dissolved Zinc (Zn)	2024/03/26		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/03/26		97	%	80 - 120
B323356	YHK	LCS	Dissolved Organic Carbon (C)	2024/03/27		92	%	80 - 120
B323357	YHK	LCS	Total Organic Carbon (C)	2024/03/27		103	%	80 - 120
B323492	MAP	LCS	Orthophosphate (P)	2024/03/26		105	%	80 - 120
B323520	SKM	LCS	True Colour	2024/03/26		96	%	80 - 120
B323522	CHA	LCS	Total Petroleum Hydrocarbon	2024/03/28		91	%	70 - 130
B324047	KKC	LCS	Total Aluminum (Al)	2024/03/27		100	%	80 - 120
			Total Chromium (Cr)	2024/03/27		101	%	80 - 120
			Total Cobalt (Co)	2024/03/27		102	%	80 - 120
			Total Copper (Cu)	2024/03/27		101	%	80 - 120
			Total Lead (Pb)	2024/03/27		97	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Antimony (Sb)	2024/03/27		101	%	80 - 120
			Total Molybdenum (Mo)	2024/03/27		99	%	80 - 120
			Total Nickel (Ni)	2024/03/27		100	%	80 - 120
			Total Selenium (Se)	2024/03/27		102	%	80 - 120
			Total Silver (Ag)	2024/03/27		98	%	80 - 120
			Total Arsenic (As)	2024/03/27		103	%	80 - 120
			Total Thallium (Tl)	2024/03/27		101	%	80 - 120
			Total Tin (Sn)	2024/03/27		99	%	80 - 120
			Total Titanium (Ti)	2024/03/27		103	%	80 - 120
			Total Uranium (U)	2024/03/27		102	%	80 - 120
			Total Vanadium (V)	2024/03/27		102	%	80 - 120
			Total Zinc (Zn)	2024/03/27		99	%	80 - 120
			Total Beryllium (Be)	2024/03/27		89	%	80 - 120
B324062	S1D	LCS	Total Iron (Fe)	2024/03/27		99	%	80 - 120
			Total Lithium (Li)	2024/03/27		94	%	80 - 120
			Total Magnesium (Mg)	2024/03/27		94	%	80 - 120
			Total Manganese (Mn)	2024/03/27		100	%	80 - 120
			Total Potassium (K)	2024/03/27		95	%	80 - 120
			Total Sodium (Na)	2024/03/27		95	%	80 - 120
			Total Strontium (Sr)	2024/03/27		94	%	80 - 120
			Total Sulphur (S)	2024/03/27		93	%	80 - 120
			Total Phosphorus (P)	2024/03/27		94	%	80 - 120
			Total Barium (Ba)	2024/03/27		98	%	80 - 120
			Total Silicon (Si)	2024/03/27		97	%	80 - 120
			Total Boron (B)	2024/03/27		97	%	80 - 120
			Total Calcium (Ca)	2024/03/27		96	%	80 - 120
B324912	MPK	LCS	Total Mercury (Hg)	2024/03/28		107	%	80 - 120
B325437	MKJ	LCS	Dissolved Mercury (Hg)	2024/03/28		102	%	80 - 120
B323278	CTU	SRM	Total Nitrogen (N)	2024/03/27		96	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

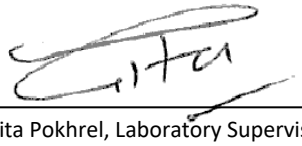
Bureau Veritas Job #: C420367
Report Date: 2024/04/03

Advisian
Task Order#: 417085-49223
Site#: N/A
Site Location: Norman Wells, NWT
Project #: 417085-49223

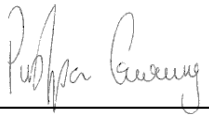
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

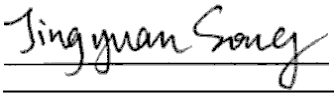


Gita Pokhrel, Laboratory Supervisor



Pushpa Gurung, Laboratory Supervisor

Rahul Suryawanshi, Senior Analyst



Jingyuan Song, QP, Organics – Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

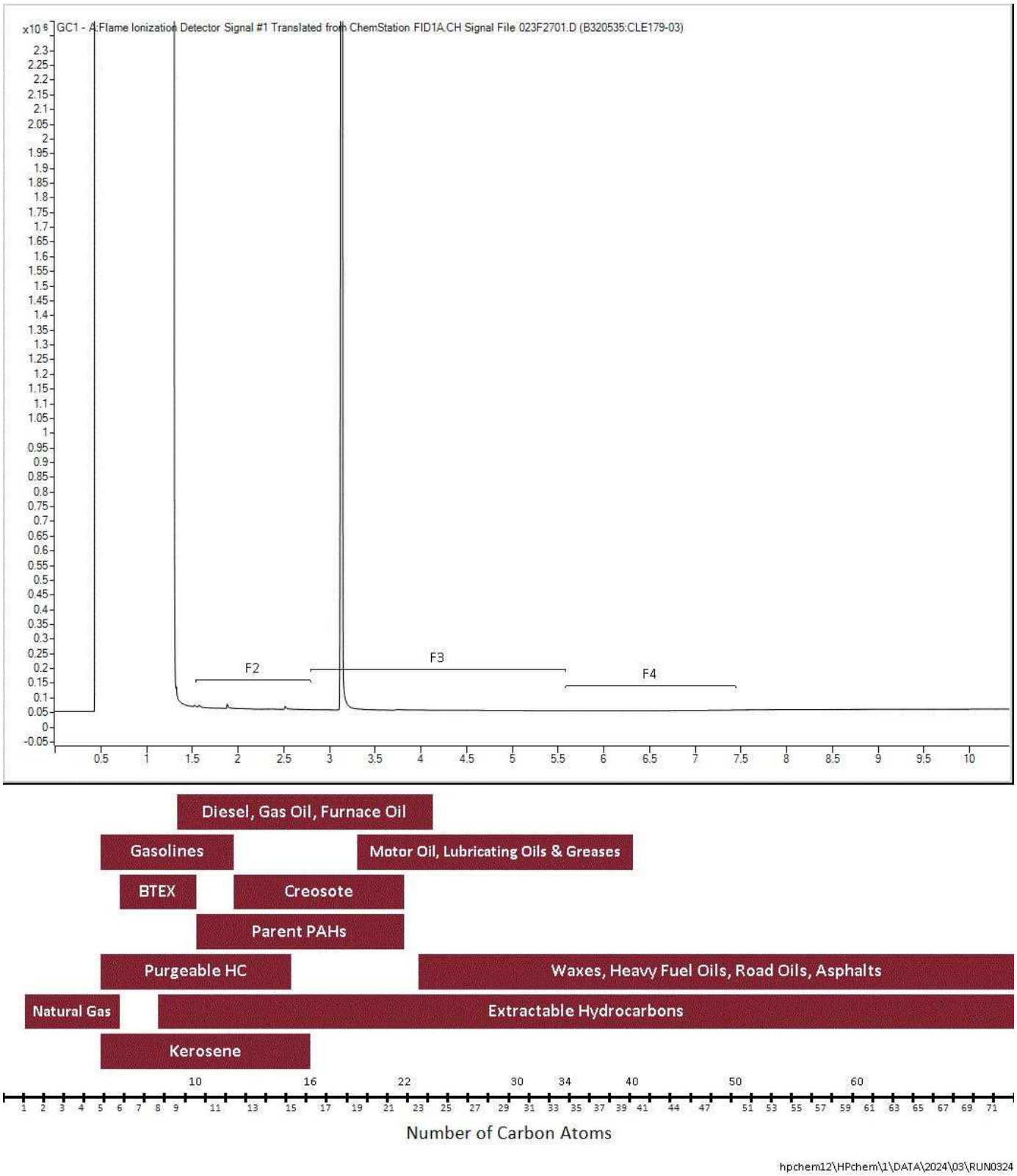
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C420367
Report Date: 2024/04/03
Bureau Veritas Sample: CLE179

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DS-04

CCME Hydrocarbons (F2-F4 in water) Chromatogram



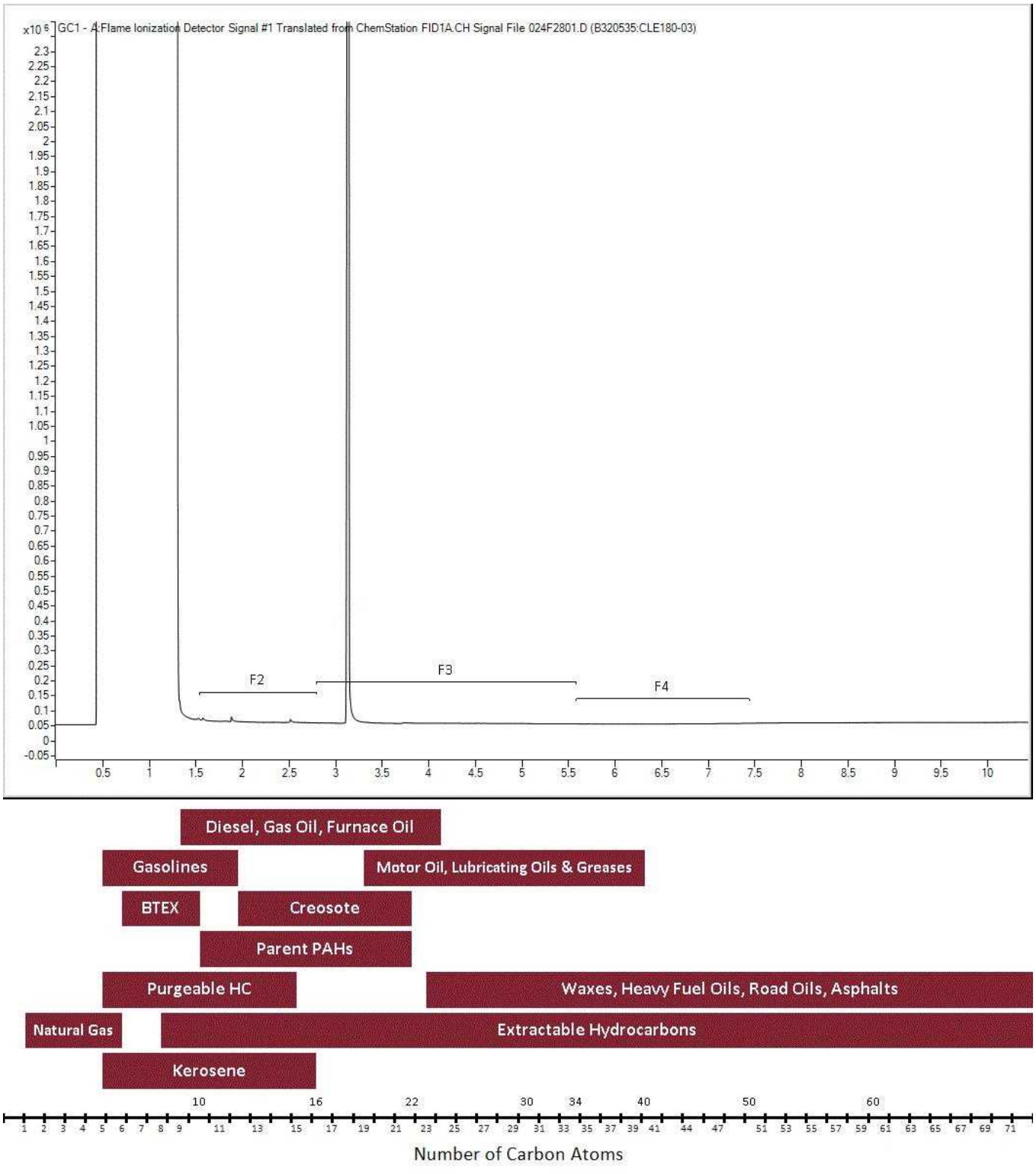
hpchem12\HPchem\1\DATA\2024\03\RUN0324

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

Bureau Veritas Job #: C420367
Report Date: 2024/04/03
Bureau Veritas Sample: CLE180

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DUP 1

CCME Hydrocarbons (F2-F4 in water) Chromatogram

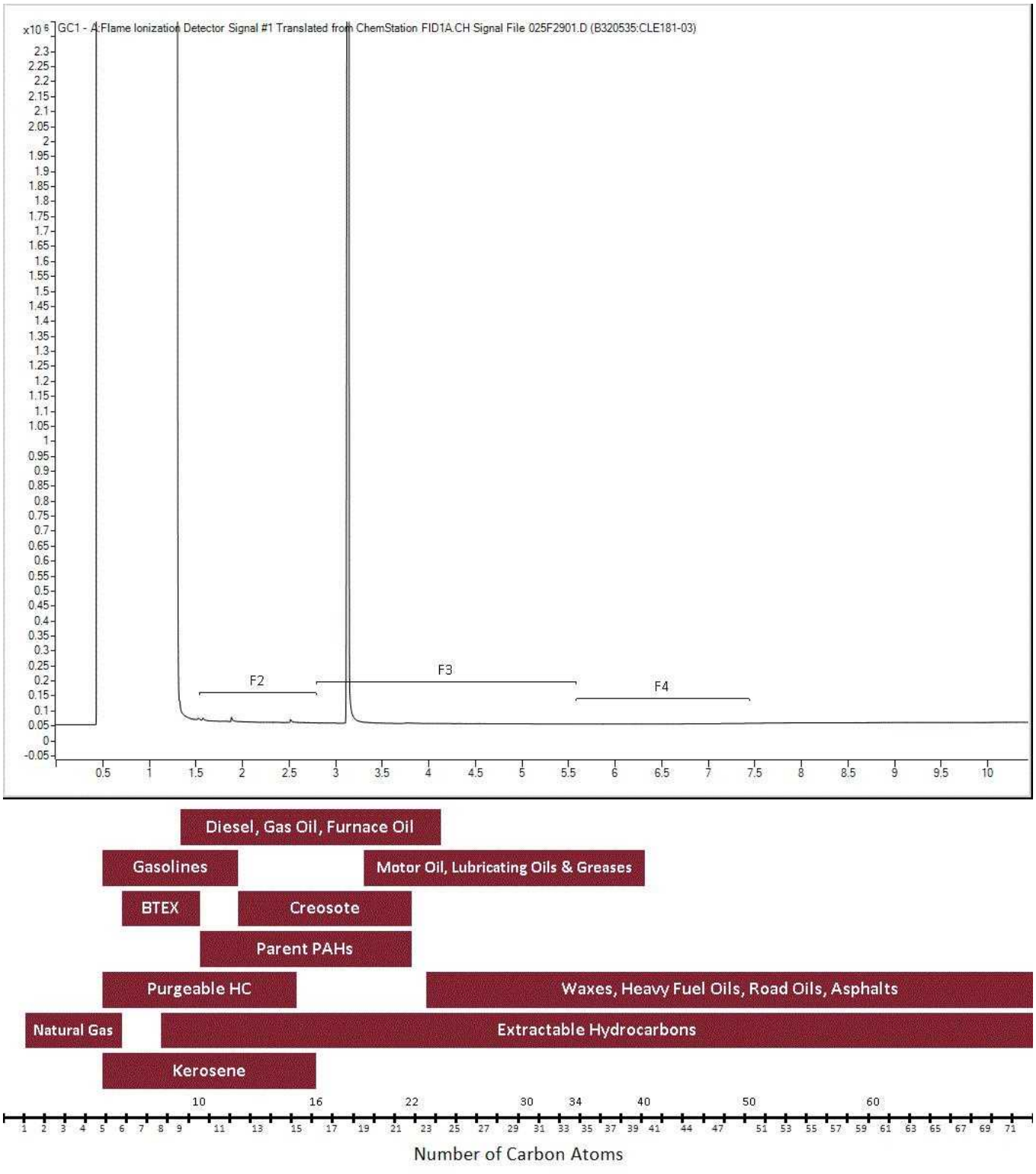


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C420367
Report Date: 2024/04/03
Bureau Veritas Sample: CLE181

Advisian
Task Order#:417085-49223Line Item:
Site#: N/A
Site Location: Norman Wells, NWT
Client ID: AEMP-DUP4-TRIP BLANK

CCME Hydrocarbons (F2-F4 in water) Chromatogram



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

Maxxam
A Bureau Veritas Group Company

Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

412

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

AZE

C of C # 299613

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☑ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587-877-6249	Ph: 587-877-6249
Sampler Name (Print): Stacy Gibb / Alex Haigh	Consultant Project #: 417085-49223-23200

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☐ DIS ☐	MERCURY: TOTAL ☐ DISSOLVED ☐	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	O/G Grease	Tot, POC, COD, Sulphide	Nitrate, Nitrite, Ammonia, Total TKN	Orthophosphate	Sulphur - total & dissolved	Alkalized PAHs, TPH	Headspace in BTEX
1 AEMP-DS-04		X			18	2024/03/18	11:45	X			X		X						X	X					X			X	X	X	X	X	X	X	X
2 AEMP-DUP1		X			18	2024/03/18	11:45	X			X		X						X	X					X			X	X	X	X	X	X	X	X
3 AEMP-Dup 4-TripBlank				X	8	2024/03/18	1300				X		X																X					X	
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-49223-23200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☑ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com cacal-IORdatafrack@worley.com stacy.gibb@worley.com IES A260 1436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☑
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	2	2	2
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	1	2	3
SEAL INTACT						
COOLING MEDIA PRESENT						

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	1	2	3
SEAL INTACT						
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C420367

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1.	Alex Haigh	2024/03/20	10:00	1. Deji Wu	2024/03/22 DW2	13:38
2.				2.		
3.				3.		

SAMPLES
LABELED BY: DW2
VERIFIED BY: AZE

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Maxxam
A Bureau Veritas Group Company

Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

412

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

AZE

Page 1 of 1

C of C # 299613

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☑ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587-877-6249	Ph: 587-877-6249
Sampler Name (Print): Stacy Gibb / Alex Haigh	Consultant Project #: 417085-49223-23200

ANALYSIS REQUESTED

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☐ DIS ☑	MERCURY: TOTAL ☐ DISSOLVED ☑	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	true color, TSS, TDS, Turbidity	O.I. & Grease	TPC, DOC, COD, Sulphide	Nitrate, Nitrite, Ammonia Total/Tkn	Orthophosphate	Sulphur - total & dissolved	Alkalized PAHs, TPH	Hard space in BTEX
1 AEMP-DS-04		X			18	2024/03/18	11:45	X			X		X					X	X	X					X			X	X	X	X	X	X	X	X
2 AEMP-DUP1		X			18	2024/03/18	11:45	X			X		X					X	X	X					X			X	X	X	X	X	X	X	X
3 AEMP-Dup 4-Trip Blank				X	8	2024/03/18	1500				X		X																X						X	
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-49223-23200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☑ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS email
canada.chemistry@worley.com
cacal-IORdatatrack@worley.com
stacy.gibb@worley.com
IESA260 1436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☑
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

LAB USE ONLY
MAXXAM JOB # C420367

SAMPLES
LABELED BY: DW2
VERIFIED BY: AZE

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT	✓						
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID # MCAC	TEMP °C	1	2	3
SEAL PRESENT	✓						
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT							
SEAL INTACT							
COOLING MEDIA PRESENT							

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1.	Alex Haigh	2024/03/20	10:00	1. Deji WK	2024/03 DW2	2024/03/22 13:38
2.	DEJI WK	2024/03/22	16:00	2.	SEHN ENT	2024/03/23 07:00
3.				3.		

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200
Your C.O.C. #: 299620

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537494
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C454939
Received: 2024/07/19, 17:48

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200
Your C.O.C. #: 299620

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537494
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C454939
Received: 2024/07/19, 17:48

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200
Your C.O.C. #: 299620

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537494
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C454939

Received: 2024/07/19, 17:48

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
06 Aug 2024 10:03:35

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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

Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRR470	CRR483		
Sampling Date		2024/07/17 10:30	2024/07/17 10:30		
COC Number		299620	299620		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B447091
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B447283
Toluene	mg/L	<0.00040	<0.00040	0.00040	B447283
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B447283
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B447283
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B447283
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B446580
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B446580
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B447283
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	96	97		B447091
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	94	96		B447283
4-Bromofluorobenzene (sur.)	%	108	108		B447283
D4-1,2-Dichloroethane (sur.)	%	93	93		B447283
RDL = Reportable Detection Limit					

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TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRR470	CRR483		
Sampling Date		2024/07/17 10:30	2024/07/17 10:30		
COC Number		299620	299620		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	0.25	0.20	B446601
Nutrients					
Total Nitrogen (N)	mg/L	<0.20 (1)	0.32 (2)	0.20	B448650

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRR470			CRR470			CRR483		
Sampling Date		2024/07/17 10:30			2024/07/17 10:30			2024/07/17 10:30		
COC Number		299620			299620			299620		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements										
Total Cadmium (Cd)	mg/L	0.00014	0.000020	B446372				0.00015	0.000020	B446372
Total Mercury (Hg)	ug/L	0.0064	0.0019	B451614				0.012	0.0019	B451614
Total Aluminum (Al)	mg/L	1.6	0.0030	B452741	1.5	0.0030	B452741	2.2	0.0030	B453406
Total Antimony (Sb)	mg/L	<0.00060	0.00060	B452741	<0.00060	0.00060	B452741	<0.00060	0.00060	B453406
Total Arsenic (As)	mg/L	0.0017	0.00020	B452741	0.0015	0.00020	B452741	0.0022	0.00020	B453406
Total Barium (Ba)	mg/L	0.10	0.010	B452744	0.096	0.010	B452744	0.12	0.010	B453410
Total Beryllium (Be)	mg/L	<0.0010	0.0010	B452741	<0.0010	0.0010	B452741	<0.0010	0.0010	B453406
Total Boron (B)	mg/L	<0.020	0.020	B452744	<0.020	0.020	B452744	0.024	0.020	B453410
Total Calcium (Ca)	mg/L	45	0.30	B452744	44	0.30	B452744	42	0.30	B453410
Total Chromium (Cr)	mg/L	0.0027	0.0010	B452741	0.0026	0.0010	B452741	0.0035	0.0010	B453406
Total Cobalt (Co)	mg/L	0.0017	0.00030	B452741	0.0016	0.00030	B452741	0.0024	0.00030	B453406
Total Copper (Cu)	mg/L	0.0043	0.0010	B452741	0.0041	0.0010	B452741	0.0059	0.0010	B453406
Total Iron (Fe)	mg/L	2.9	0.060	B452744	2.8	0.060	B452744	4.7	0.060	B453410
Total Lead (Pb)	mg/L	0.0017	0.00020	B452741	0.0016	0.00020	B452741	0.0027	0.00020	B453406
Total Lithium (Li)	mg/L	<0.020	0.020	B452744	<0.020	0.020	B452744	<0.020	0.020	B453410
Total Magnesium (Mg)	mg/L	15	0.20	B452744	14	0.20	B452744	12	0.20	B453410
Total Manganese (Mn)	mg/L	0.050	0.0040	B452744	0.049	0.0040	B452744	0.085	0.0040	B453410
Total Molybdenum (Mo)	mg/L	0.0012	0.00020	B452741	0.0011	0.00020	B452741	0.0015	0.00020	B453406
Total Nickel (Ni)	mg/L	0.0077	0.00050	B452741	0.0073	0.00050	B452741	0.0079	0.00050	B453406
Total Phosphorus (P)	mg/L	<0.10	0.10	B452744	<0.10	0.10	B452744	0.13	0.10	B453410
Total Potassium (K)	mg/L	1.4	0.30	B452744	1.4	0.30	B452744	1.6	0.30	B453410
Total Selenium (Se)	mg/L	0.00057	0.00020	B452741	0.00061	0.00020	B452741	0.00057	0.00020	B453406
Total Silicon (Si)	mg/L	5.6	0.50	B452744	5.4	0.50	B452744	4.3	0.50	B453410
Total Silver (Ag)	mg/L	<0.00010	0.00010	B452741	<0.00010	0.00010	B452741	<0.00010	0.00010	B453406
Total Sodium (Na)	mg/L	8.5	0.50	B452744	8.2	0.50	B452744	7.1	0.50	B453410
Total Strontium (Sr)	mg/L	0.28	0.020	B452744	0.27	0.020	B452744	0.23	0.020	B453410
Total Sulphur (S)	mg/L	23	0.20	B452744	22	0.20	B452744	15	0.20	B453410
Total Thallium (Tl)	mg/L	<0.00020	0.00020	B452741	<0.00020	0.00020	B452741	<0.00020	0.00020	B453406
Total Tin (Sn)	mg/L	<0.0010	0.0010	B452741	<0.0010	0.0010	B452741	<0.0010	0.0010	B453406
Total Titanium (Ti)	mg/L	0.017	0.0010	B452741	0.018	0.0010	B452741	0.025	0.0010	B453406

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRR470			CRR470			CRR483		
Sampling Date		2024/07/17 10:30			2024/07/17 10:30			2024/07/17 10:30		
COC Number		299620			299620			299620		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Total Uranium (U)	mg/L	0.0010	0.00010	B452741	0.00099	0.00010	B452741	0.0011	0.00010	B453406
Total Vanadium (V)	mg/L	0.0052	0.0010	B452741	0.0051	0.0010	B452741	0.0070	0.0010	B453406
Total Zinc (Zn)	mg/L	0.041	0.0030	B452741	0.039	0.0030	B452741	0.062	0.0030	B453406

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRR470			CRR470			CRR483		
Sampling Date		2024/07/17 10:30			2024/07/17 10:30			2024/07/17 10:30		
COC Number		299620			299620			299620		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	170	0.50	B446559				130	0.50	B446559
Ion Balance (% Difference)	%	0.65	N/A	B446560				4.0	N/A	B446560
Nitrate (N)	mg/L	0.079	0.010	B446589				0.062	0.010	B446589
Nitrate (NO3)	mg/L	0.35	0.044	B446588				0.28	0.044	B446588
Nitrite (NO2)	mg/L	<0.033	0.033	B446588				<0.033	0.033	B446588
Sulphide (as H2S)	mg/L	0.016	0.0020	B446348				0.019	0.0020	B446348
Demand Parameters										
Chemical Oxygen Demand	mg/L	24	10	B450983				29	10	B450983
Elements										
Dissolved Cadmium (Cd)	mg/L	0.000025	0.000020	B446605				<0.000020	0.000020	B446605
Misc. Inorganics										
Conductivity	uS/cm	380	2.0	B448104				330	2.0	B448104
Dissolved Organic Carbon (C)	mg/L	3.5	0.50	B457234				3.6	0.50	B457234
pH	pH	6.99	N/A	B448103				7.03	N/A	B448103
Total Organic Carbon (C)	mg/L	2.9	0.50	B457260				3.2	0.50	B457260
Total Dissolved Solids	mg/L	200	10	B450610				150	10	B450610
Total Suspended Solids	mg/L	79	1.0	B450639				170	1.0	B450639
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B448101				<1.0	1.0	B448101
Alkalinity (Total as CaCO3)	mg/L	100	1.0	B448101				100	1.0	B448101
Bicarbonate (HCO3)	mg/L	130	1.0	B448101				130	1.0	B448101
Carbonate (CO3)	mg/L	<1.0	1.0	B448101				<1.0	1.0	B448101
Hydroxide (OH)	mg/L	<1.0	1.0	B448101				<1.0	1.0	B448101
Total Sulphide	mg/L	0.015	0.0018	B447475				0.018	0.0018	B447475
Chloride (Cl)	mg/L	9.0	1.0	B446866				7.3	1.0	B446866
Sulphate (SO4)	mg/L	69	1.0	B446866				43	1.0	B446866
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B452969				<0.015	0.015	B452700
Orthophosphate (P)	mg/L	<0.0030	0.0030	B446734				<0.0030	0.0030	B446734

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRR470			CRR470			CRR483		
Sampling Date		2024/07/17 10:30			2024/07/17 10:30			2024/07/17 10:30		
COC Number		299620			299620			299620		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B446789	<0.010	0.010	B446789	<0.010	0.010	B446789
Nitrate plus Nitrite (N)	mg/L	0.079	0.010	B446789	0.071	0.010	B446789	0.062	0.010	B446789
Misc. Organics										
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B429286				<2.0	2.0	B429286
Physical Properties										
True Colour	PtCo units	7.7	2.0	B446704				8.5	2.0	B446704
Physical Properties										
Turbidity	NTU	97	0.10	B446309				120	0.10	B446309

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CRR483		
Sampling Date		2024/07/17 10:30		
COC Number		299620		
	UNITS	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
Anions				
Chloride (Cl)	mg/L	7.3	1.0	B446866
Sulphate (SO4)	mg/L	45	1.0	B446866

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRR470	CRR483		
Sampling Date		2024/07/17 10:30	2024/07/17 10:30		
COC Number		299620	299620		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B446356
Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B445873
Acridine	ug/L	<0.040	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Perylene	ug/L	<0.050	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	<0.20	0.20	B445873
Retene	ug/L	<0.050	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRR470	CRR483		
Sampling Date		2024/07/17 10:30	2024/07/17 10:30		
COC Number		299620	299620		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C2-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C3-fluorene	ug/L	<0.050	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	111	126		B445873
D8-ACENAPHTHYLENE (sur.)	%	99	117		B445873
D8-NAPHTHALENE (sur.)	%	83	104		B445873
TERPHENYL-D14 (sur.)	%	120	134 (1)		B445873

RDL = Reportable Detection Limit

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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRR470	CRR483		
Sampling Date		2024/07/17 10:30	2024/07/17 10:30		
COC Number		299620	299620		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B451604
RDL = Reportable Detection Limit					

Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRR470	CRR483		
Sampling Date		2024/07/17 10:30	2024/07/17 10:30		
COC Number		299620	299620		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.061	0.036	0.0030	B447700
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B447700
Dissolved Arsenic (As)	mg/L	0.00028	0.00025	0.00020	B447700
Dissolved Barium (Ba)	mg/L	0.057	0.048	0.010	B448575
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B447700
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B448575
Dissolved Calcium (Ca)	mg/L	43	34	0.30	B448575
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B447700
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B447700
Dissolved Copper (Cu)	mg/L	0.0018	0.0015	0.0010	B447700
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B448575
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B447700
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	B448575
Dissolved Magnesium (Mg)	mg/L	15	11	0.20	B448575
Dissolved Manganese (Mn)	mg/L	0.013	<0.0040	0.0040	B448575
Dissolved Molybdenum (Mo)	mg/L	0.0011	0.00099	0.00020	B447700
Dissolved Nickel (Ni)	mg/L	0.0011	0.00084	0.00050	B447700
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B448575
Dissolved Potassium (K)	mg/L	0.91	0.84	0.30	B448575
Dissolved Selenium (Se)	mg/L	0.00054	0.00039	0.00020	B447700
Dissolved Silicon (Si)	mg/L	1.8	1.8	0.50	B448575
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B447700
Dissolved Sodium (Na)	mg/L	8.5	7.4	0.50	B448575
Dissolved Strontium (Sr)	mg/L	0.27	0.21	0.020	B448575
Dissolved Sulphur (S)	mg/L	25	16	0.20	B448575
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B447700
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B447700
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B447700
Dissolved Uranium (U)	mg/L	0.00082	0.00070	0.00010	B447700
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B447700
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B447700
RDL = Reportable Detection Limit					

Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

TEST SUMMARY

Bureau Veritas ID: CRR470
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/07/17
Relinquished: 2024/07/18
Received: 2024/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B448101	N/A	2024/07/26	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B447283	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B446580	N/A	2024/07/24	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B446605	N/A	2024/07/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B446372	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B446866	N/A	2024/07/21	Adam Fishleigh
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B446704	N/A	2024/07/20	Monakint Patel
Carbon (DOC)	TECH	B457234	N/A	2024/07/29	Jill Yuen
Conductivity @25C	COND	B448104	N/A	2024/07/26	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B446348	N/A	2024/07/22	Automated Statchk
Hardness	CALC	B446559	N/A	2024/07/23	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B451614	2024/07/24	2024/07/24	Kevin Hung
Elements by ICP - Dissolved	ICPA	B448575	N/A	2024/07/23	Sarah Dolan
Elements by ICP - Total	ICPA	B452744	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B447700	N/A	2024/07/22	Jason Bao
Elements by ICPMS - Total	ICPM	B452741	2024/07/25	2024/07/26	Jason Bao
Ion Balance	CALC	B446560	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B452969	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B446588	N/A	2024/07/21	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B446789	N/A	2024/07/21	Isabelle White
Nitrate (as N)	CALC	B446589	2024/07/21	2024/07/21	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B446356	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B448103	N/A	2024/07/26	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B446734	N/A	2024/07/20	Isabelle White
Total Sulphide	SPEC	B447475	N/A	2024/07/22	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B450610	2024/07/24	2024/07/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B446601	N/A	2024/07/24	Automated Statchk
Nitrogen (Total)	AC/COL	B448650	2024/07/23	2024/07/24	Yan Lin
Carbon (Total Organic)	TECH	B457260	N/A	2024/07/29	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B429286	2024/07/21	2024/07/22	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B450639	2024/07/24	2024/07/24	Daryl Viktoria Noval
Turbidity	TURB	B446309	N/A	2024/07/20	Thi Boi Tran Nguyen

Bureau Veritas ID: CRR470 Dup
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/07/17
Relinquished: 2024/07/18
Received: 2024/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Elements by ICP - Total	ICPA	B452744	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Total	ICPM	B452741	2024/07/25	2024/07/26	Jason Bao

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

TEST SUMMARY

Bureau Veritas ID: CRR470 Dup
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/07/17
Relinquished: 2024/07/18
Received: 2024/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B446789	N/A	2024/07/21	Isabelle White

Bureau Veritas ID: CRR483
Sample ID: AEMP-DS-07
Matrix: Water

Collected: 2024/07/17
Relinquished: 2024/07/18
Received: 2024/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B448101	N/A	2024/07/26	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B447283	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B446580	N/A	2024/07/24	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B446605	N/A	2024/07/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B446372	N/A	2024/07/27	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B446866	N/A	2024/07/21	Adam Fishleigh
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B446704	N/A	2024/07/20	Monakint Patel
Carbon (DOC)	TECH	B457234	N/A	2024/07/29	Jill Yuen
Conductivity @25C	COND	B448104	N/A	2024/07/26	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B446348	N/A	2024/07/22	Automated Statchk
Hardness	CALC	B446559	N/A	2024/07/23	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B451614	2024/07/24	2024/07/24	Kevin Hung
Elements by ICP - Dissolved	ICPA	B448575	N/A	2024/07/22	Sarah Dolan
Elements by ICP - Total	ICPA	B453410	2024/07/25	2024/07/26	Hue Quyen Vuong
Elements by ICPMS - Dissolved	ICPM	B447700	N/A	2024/07/22	Jason Bao
Elements by ICPMS - Total	ICPM	B453406	2024/07/25	2024/07/26	Kristijan Kovac
Ion Balance	CALC	B446560	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B452700	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B446588	N/A	2024/07/21	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B446789	N/A	2024/07/21	Isabelle White
Nitrate (as N)	CALC	B446589	2024/07/21	2024/07/21	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B446356	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B448103	N/A	2024/07/26	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B446734	N/A	2024/07/20	Isabelle White
Total Sulphide	SPEC	B447475	N/A	2024/07/22	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B450610	2024/07/24	2024/07/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B446601	N/A	2024/07/24	Automated Statchk
Nitrogen (Total)	AC/COL	B448650	2024/07/23	2024/07/24	Yan Lin
Carbon (Total Organic)	TECH	B457260	N/A	2024/07/29	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B429286	2024/07/21	2024/07/22	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B450639	2024/07/24	2024/07/24	Daryl Viktoria Noval
Turbidity	TURB	B446309	N/A	2024/07/20	Thi Boi Tran Nguyen

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Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

TEST SUMMARY

Bureau Veritas ID: CRR483 Dup
Sample ID: AEMP-DS-07
Matrix: Water

Collected: 2024/07/17
Relinquished: 2024/07/18
Received: 2024/07/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	B446866	N/A	2024/07/21	Adam Fishleigh

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GENERAL COMMENTS

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

Package 1	3.6°C

Note: Insufficient number of bottles to perform analysis; For both samples, we only received 1x 250-mL amber with sulfuric acid but both Oil and Grease and TPH were requested. Confirmed to proceed with only TPH. Alex Haigh was notified via email and the lab proceeded with the analysis.

Sample CRR470 [AEMP-DS-06] : Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample CRR483 [AEMP-DS-07] : Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

RESULTS OF CHEMICAL ANALYSES OF WATER Comments

Sample CRR470 [AEMP-DS-06] NO2 (N); NO2 (N) + NO3 (N) in Water: Sample was originally processed within hold time. Data quality required investigation. Re-analysis was completed past recommended hold time.
Sample CRR483 [AEMP-DS-07] NO2 (N); NO2 (N) + NO3 (N) in Water: Sample was originally processed within hold time. Data quality required investigation. Re-analysis was completed past recommended hold time.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B429286	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/22	<2.0		mg/L	
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B446309	TNY	Method Blank	Turbidity	2024/07/20	<0.10		NTU	
B446704	MOP	Method Blank	True Colour	2024/07/20	<2.0		PtCo units	
B446734	ISW	Method Blank	Orthophosphate (P)	2024/07/20	<0.0030		mg/L	
B446789	ISW	Method Blank	Nitrite (N)	2024/07/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/21	<0.010		mg/L	
B446866	AFI	Method Blank	Chloride (Cl)	2024/07/21	<1.0		mg/L	
			Sulphate (SO4)	2024/07/21	<1.0		mg/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B447283	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		91	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B447475	NJD	Method Blank	Total Sulphide	2024/07/22	<0.0018		mg/L	
B447700	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/07/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/22	<0.0010		mg/L	
B448101	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/07/26	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/26	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/26	<1.0		mg/L	
			Carbonate (CO3)	2024/07/26	<1.0		mg/L	
			Hydroxide (OH)	2024/07/26	<1.0		mg/L	
B448104	AYE	Method Blank	Conductivity	2024/07/26	<2.0		uS/cm	
B448575	S1D	Method Blank	Dissolved Iron (Fe)	2024/07/22	<0.060		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Lithium (Li)	2024/07/22	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/22	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/22	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/22	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/22	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/22	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/22	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/22	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/22	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/22	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/22	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/22	<0.30		mg/L	
B448650	YL7	Method Blank	Total Nitrogen (N)	2024/07/24	<0.020		mg/L	
B450610	DVN	Method Blank	Total Dissolved Solids	2024/07/25	<10		mg/L	
B450639	DVN	Method Blank	Total Suspended Solids	2024/07/24	<1.0		mg/L	
B450983	AP1	Method Blank	Chemical Oxygen Demand	2024/07/24	<10		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B451614	KHU	Method Blank	Total Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452700	AFI	Method Blank	Total Ammonia (N)	2024/07/25	<0.015		mg/L	
B452741	JAB	Method Blank	Total Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Total Uranium (U)	2024/07/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452744	VSC	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B452969	AFI	Method Blank	Total Ammonia (N)	2024/07/25	<0.015		mg/L	
B453406	KKC	Method Blank	Total Aluminum (Al)	2024/07/26	<0.0030		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Chromium (Cr)	2024/07/26	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/26	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/26	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/26	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/26	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/26	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/26	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/26	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/26	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/26	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/26	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/26	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/26	<0.0010		mg/L	
			Total Uranium (U)	2024/07/26	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/26	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/26	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/26	<0.0010		mg/L	
B453410	HQV	Method Blank	Total Iron (Fe)	2024/07/26	<0.060		mg/L	
			Total Lithium (Li)	2024/07/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/26	<0.0040		mg/L	
			Total Potassium (K)	2024/07/26	<0.30		mg/L	
			Total Sodium (Na)	2024/07/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/26	<0.020		mg/L	
			Total Sulphur (S)	2024/07/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/26	<0.10		mg/L	
			Total Barium (Ba)	2024/07/26	<0.010		mg/L	
			Total Silicon (Si)	2024/07/26	<0.50		mg/L	
			Total Boron (B)	2024/07/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/26	<0.30		mg/L	
B457234	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B457260	JYU	Method Blank	Total Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B446789	ISW	RPD [CRR470-02]	Nitrite (N)	2024/07/21	NC		%	20
			Nitrate plus Nitrite (N)	2024/07/21	9.8		%	20
B452741	JAB	RPD [CRR470-05]	Total Aluminum (Al)	2024/07/26	5.3		%	20
			Total Chromium (Cr)	2024/07/26	1.6		%	20
			Total Cobalt (Co)	2024/07/26	2.4		%	20
			Total Copper (Cu)	2024/07/26	5.1		%	20
			Total Lead (Pb)	2024/07/26	6.6		%	20
			Total Antimony (Sb)	2024/07/26	NC		%	20
			Total Molybdenum (Mo)	2024/07/26	8.5		%	20
			Total Nickel (Ni)	2024/07/26	6.2		%	20
			Total Selenium (Se)	2024/07/26	5.7		%	20
			Total Silver (Ag)	2024/07/26	NC		%	20
			Total Arsenic (As)	2024/07/26	13		%	20
			Total Thallium (Tl)	2024/07/26	NC		%	20
			Total Tin (Sn)	2024/07/26	NC		%	20
			Total Titanium (Ti)	2024/07/26	5.9		%	20
			Total Uranium (U)	2024/07/26	4.5		%	20
			Total Vanadium (V)	2024/07/26	2.7		%	20
			Total Zinc (Zn)	2024/07/26	5.7		%	20
			Total Beryllium (Be)	2024/07/26	NC		%	20

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B452744	VSC	RPD [CRR470-05]	Total Iron (Fe)	2024/07/25	3.1		%	20
			Total Lithium (Li)	2024/07/25	NC		%	20
			Total Magnesium (Mg)	2024/07/25	2.8		%	20
			Total Manganese (Mn)	2024/07/25	3.1		%	20
			Total Potassium (K)	2024/07/25	2.7		%	20
			Total Sodium (Na)	2024/07/25	3.1		%	20
			Total Strontium (Sr)	2024/07/25	2.5		%	20
			Total Sulphur (S)	2024/07/25	3.5		%	20
			Total Phosphorus (P)	2024/07/25	NC		%	20
			Total Barium (Ba)	2024/07/25	3.5		%	20
			Total Silicon (Si)	2024/07/25	3.3		%	20
			Total Boron (B)	2024/07/25	NC		%	20
			Total Calcium (Ca)	2024/07/25	2.6		%	20
B446866	AFI	RPD [CRR483-02]	Chloride (Cl)	2024/07/21	0.19		%	20
			Sulphate (SO4)	2024/07/21	4.8		%	20
B446789	ISW	Matrix Spike [CRR470-02]	Nitrite (N)	2024/07/21		99	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/21		111	%	80 - 120
B446866	AFI	Matrix Spike [CRR483-02]	Chloride (Cl)	2024/07/21		101	%	80 - 120
			Sulphate (SO4)	2024/07/21		80	%	80 - 120
B447091	CHA	Matrix Spike [CRR470-08]	O-TERPHENYL (sur.)	2024/07/26		107	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		108	%	60 - 140
B429286	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/22		93	%	70 - 130
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130
			Pyrene	2024/07/30		90	%	50 - 130
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130

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			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B446309	TNY	LCS	Turbidity	2024/07/20		100	%	80 - 120
B446704	MOP	LCS	True Colour	2024/07/20		92	%	80 - 120
B446734	ISW	LCS	Orthophosphate (P)	2024/07/20		109	%	80 - 120
B446789	ISW	LCS	Nitrite (N)	2024/07/21		102	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/21		100	%	80 - 120
B446866	AFI	LCS	Chloride (Cl)	2024/07/21		100	%	80 - 120
			Sulphate (SO4)	2024/07/21		103	%	80 - 120
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B447283	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		105	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		95	%	50 - 140
			Benzene	2024/07/24		96	%	60 - 130
			Toluene	2024/07/24		93	%	60 - 130
			Ethylbenzene	2024/07/24		97	%	60 - 130
			m & p-Xylene	2024/07/24		88	%	60 - 130
			o-Xylene	2024/07/24		89	%	60 - 130
			F1 (C6-C10)	2024/07/24		100	%	60 - 140
B447475	NJD	LCS	Total Sulphide	2024/07/22		101	%	80 - 120
B447700	JAB	LCS	Dissolved Aluminum (Al)	2024/07/22		116	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/22		107	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/22		107	%	80 - 120
			Dissolved Copper (Cu)	2024/07/22		108	%	80 - 120
			Dissolved Lead (Pb)	2024/07/22		110	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/22		117	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/22		113	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/22		106	%	80 - 120
			Dissolved Selenium (Se)	2024/07/22		112	%	80 - 120
			Dissolved Silver (Ag)	2024/07/22		109	%	80 - 120
			Dissolved Arsenic (As)	2024/07/22		111	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/22		109	%	80 - 120
			Dissolved Tin (Sn)	2024/07/22		112	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/22		104	%	80 - 120
			Dissolved Uranium (U)	2024/07/22		110	%	80 - 120
			Dissolved Vanadium (V)	2024/07/22		109	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/22		108	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/22		105	%	80 - 120
B448101	AYE	LCS	Alkalinity (Total as CaCO3)	2024/07/26		101	%	80 - 120
B448103	AYE	LCS	pH	2024/07/26		101	%	97 - 103
B448104	AYE	LCS	Conductivity	2024/07/26		101	%	90 - 110
B448575	S1D	LCS	Dissolved Iron (Fe)	2024/07/22		100	%	80 - 120
			Dissolved Lithium (Li)	2024/07/22		91	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/22		104	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/22		96	%	80 - 120
			Dissolved Potassium (K)	2024/07/22		98	%	80 - 120
			Dissolved Sodium (Na)	2024/07/22		100	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/22		99	%	80 - 120

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			Dissolved Sulphur (S)	2024/07/22		95	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/22		99	%	80 - 120
			Dissolved Barium (Ba)	2024/07/22		101	%	80 - 120
			Dissolved Silicon (Si)	2024/07/22		92	%	80 - 120
			Dissolved Boron (B)	2024/07/22		98	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/22		94	%	80 - 120
B448650	YL7	LCS	Total Nitrogen (N)	2024/07/24		107	%	80 - 120
B450610	DVN	LCS	Total Dissolved Solids	2024/07/25		98	%	80 - 120
B450639	DVN	LCS	Total Suspended Solids	2024/07/24		93	%	80 - 120
B450983	AP1	LCS	Chemical Oxygen Demand	2024/07/24		101	%	80 - 120
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B451614	KHU	LCS	Total Mercury (Hg)	2024/07/24		101	%	80 - 120
B452700	AFI	LCS	Total Ammonia (N)	2024/07/25		101	%	80 - 120
B452741	JAB	LCS	Total Aluminum (Al)	2024/07/25		95	%	80 - 120
			Total Chromium (Cr)	2024/07/25		102	%	80 - 120
			Total Cobalt (Co)	2024/07/25		103	%	80 - 120
			Total Copper (Cu)	2024/07/25		102	%	80 - 120
			Total Lead (Pb)	2024/07/25		102	%	80 - 120
			Total Antimony (Sb)	2024/07/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/07/25		103	%	80 - 120
			Total Nickel (Ni)	2024/07/25		102	%	80 - 120
			Total Selenium (Se)	2024/07/25		105	%	80 - 120
			Total Silver (Ag)	2024/07/25		104	%	80 - 120
			Total Arsenic (As)	2024/07/25		105	%	80 - 120
			Total Thallium (Tl)	2024/07/25		106	%	80 - 120
			Total Tin (Sn)	2024/07/25		105	%	80 - 120
			Total Titanium (Ti)	2024/07/25		104	%	80 - 120
			Total Uranium (U)	2024/07/25		106	%	80 - 120
			Total Vanadium (V)	2024/07/25		103	%	80 - 120
			Total Zinc (Zn)	2024/07/25		106	%	80 - 120
			Total Beryllium (Be)	2024/07/25		100	%	80 - 120
B452744	VSC	LCS	Total Iron (Fe)	2024/07/25		95	%	80 - 120
			Total Lithium (Li)	2024/07/25		94	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		99	%	80 - 120
			Total Manganese (Mn)	2024/07/25		91	%	80 - 120
			Total Potassium (K)	2024/07/25		95	%	80 - 120
			Total Sodium (Na)	2024/07/25		91	%	80 - 120
			Total Strontium (Sr)	2024/07/25		98	%	80 - 120
			Total Sulphur (S)	2024/07/25		90	%	80 - 120
			Total Phosphorus (P)	2024/07/25		92	%	80 - 120
			Total Barium (Ba)	2024/07/25		99	%	80 - 120
			Total Silicon (Si)	2024/07/25		88	%	80 - 120
			Total Boron (B)	2024/07/25		92	%	80 - 120
			Total Calcium (Ca)	2024/07/25		94	%	80 - 120
B452969	AFI	LCS	Total Ammonia (N)	2024/07/25		102	%	80 - 120
B453406	KKC	LCS	Total Aluminum (Al)	2024/07/26		97	%	80 - 120
			Total Chromium (Cr)	2024/07/26		97	%	80 - 120
			Total Cobalt (Co)	2024/07/26		97	%	80 - 120
			Total Copper (Cu)	2024/07/26		97	%	80 - 120
			Total Lead (Pb)	2024/07/26		99	%	80 - 120
			Total Antimony (Sb)	2024/07/26		104	%	80 - 120
			Total Molybdenum (Mo)	2024/07/26		98	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Nickel (Ni)	2024/07/26		97	%	80 - 120
			Total Selenium (Se)	2024/07/26		104	%	80 - 120
			Total Silver (Ag)	2024/07/26		95	%	80 - 120
			Total Arsenic (As)	2024/07/26		102	%	80 - 120
			Total Thallium (Tl)	2024/07/26		100	%	80 - 120
			Total Tin (Sn)	2024/07/26		96	%	80 - 120
			Total Titanium (Ti)	2024/07/26		96	%	80 - 120
			Total Uranium (U)	2024/07/26		100	%	80 - 120
			Total Vanadium (V)	2024/07/26		99	%	80 - 120
			Total Zinc (Zn)	2024/07/26		99	%	80 - 120
			Total Beryllium (Be)	2024/07/26		97	%	80 - 120
B453410	HQV	LCS	Total Iron (Fe)	2024/07/26		94	%	80 - 120
			Total Lithium (Li)	2024/07/26		94	%	80 - 120
			Total Magnesium (Mg)	2024/07/26		97	%	80 - 120
			Total Manganese (Mn)	2024/07/26		93	%	80 - 120
			Total Potassium (K)	2024/07/26		96	%	80 - 120
			Total Sodium (Na)	2024/07/26		94	%	80 - 120
			Total Strontium (Sr)	2024/07/26		97	%	80 - 120
			Total Sulphur (S)	2024/07/26		90	%	80 - 120
			Total Phosphorus (P)	2024/07/26		92	%	80 - 120
			Total Barium (Ba)	2024/07/26		100	%	80 - 120
			Total Silicon (Si)	2024/07/26		92	%	80 - 120
			Total Boron (B)	2024/07/26		90	%	80 - 120
			Total Calcium (Ca)	2024/07/26		95	%	80 - 120
B457234	JYU	LCS	Dissolved Organic Carbon (C)	2024/07/29		99	%	80 - 120
B457260	JYU	LCS	Total Organic Carbon (C)	2024/07/29		100	%	80 - 120
B448650	YL7	SRM	Total Nitrogen (N)	2024/07/24		105	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

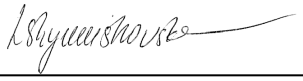
Bureau Veritas Job #: C454939
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NWT
Project #: 417085-54419.24200

VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Rahul Suryawanshi, Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

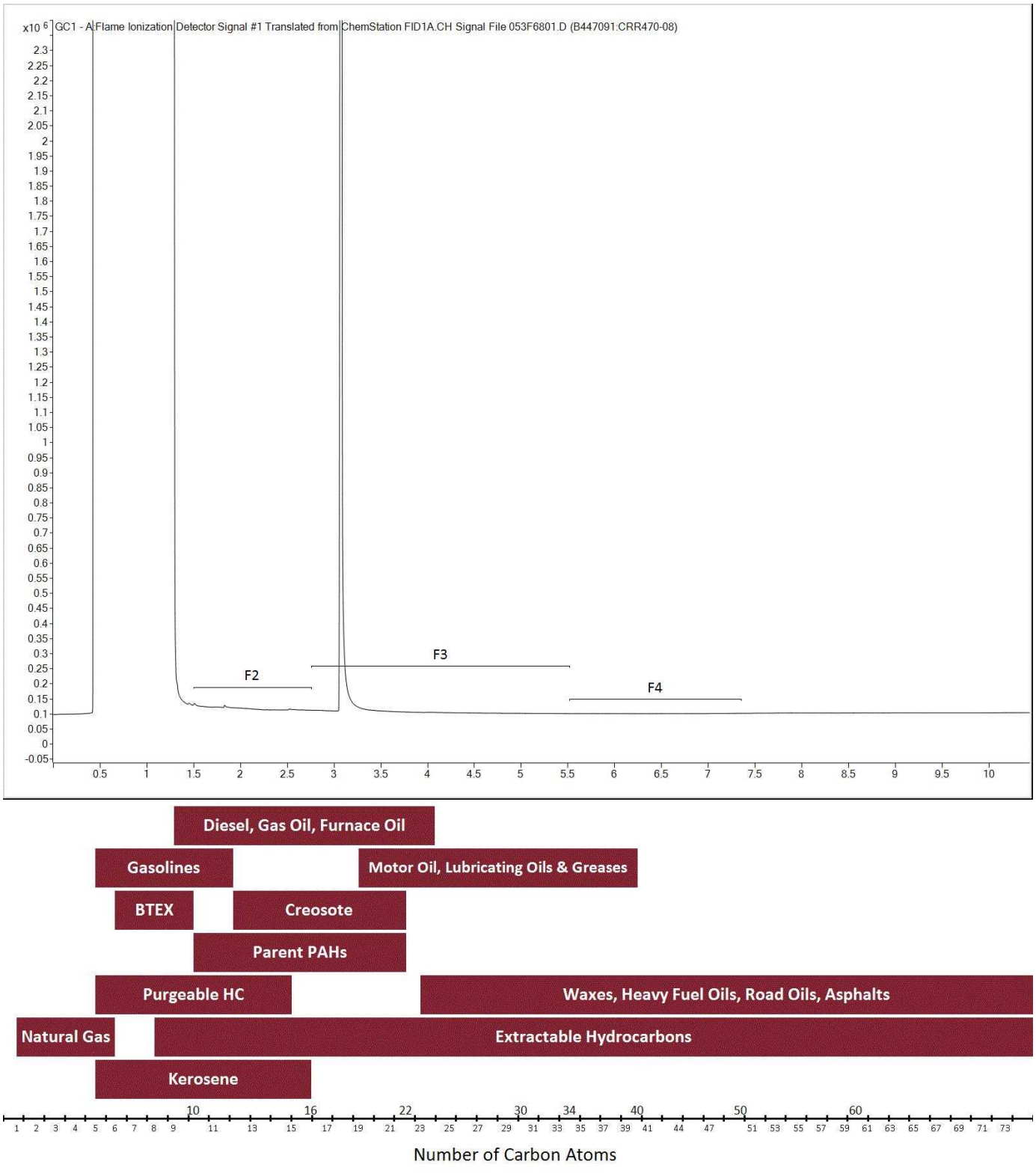
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C454939
Report Date: 2024/08/06
Bureau Veritas Sample: CRR470

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS. NWT
Client ID: AEMP-DS-06

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



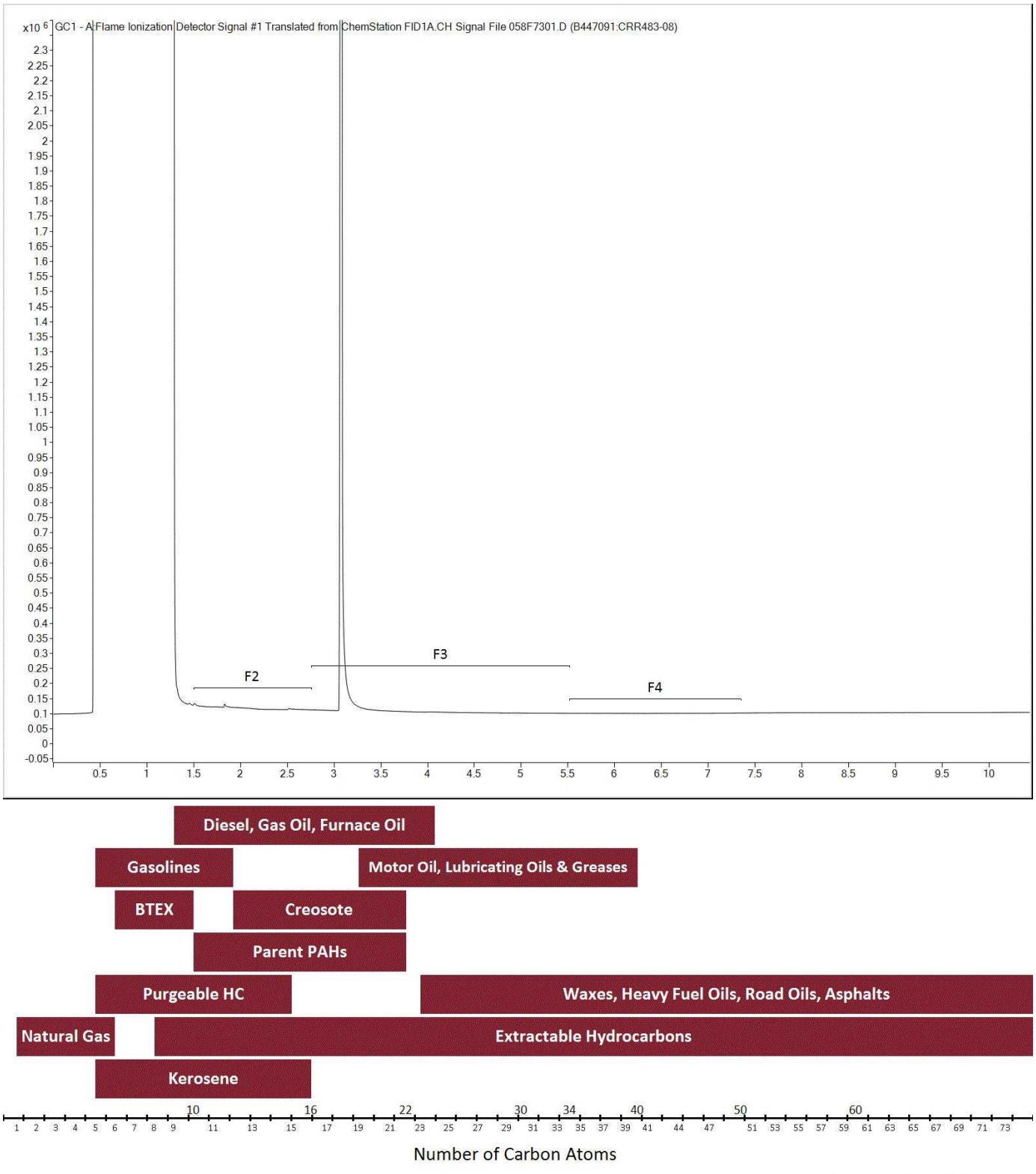
hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Bureau Veritas Job #: C454939
Report Date: 2024/08/06
Bureau Veritas Sample: CRR483

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS. NWT
Client ID: AEMP-DS-07

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 299620

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: WORLEY
Contact Name: ALEX HAIGH	Contact Name: ALEX HAIGH
Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7	Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 897 6249	Ph: 587 897 6249
Sampler Name (Print): ALEX HAIGH, TINO NGULUBE	Consultant Project #: 417085-54419.24200

ANALYSIS REQUESTED

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS ☒ TOT ☒ DIS	MERCURY ☒ TOTAL ☒ DISSOLVED	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	Oil + Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (Total), TKN	Orthophosphate	Sulphur - Total + Dissolved	COD	Alkylated PAH, TPH
1 AEMP-DS-06		X			18	2024/07/17	10:30	X			X	X							X	X					X			X	X	X	X	X	X	X	X
2 AEMP-DS-07		X			18	2024/07/17	11:00	Y			Y	Y							X	Y					Y			Y	X	X	X	X	X	X	X	Y
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			

med2-2024-07-653

IOL SITE LOCATION: NORMAN WELLS, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419.24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com
calgal-IORdatamuck@worley.com
Stacey.gibb@worley.com
IES A260436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓		TEMP °C	5.7 (1)	3.1 (2)	2.0 (3)

	YES	NO	COOLER ID # MCAL			
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓		TEMP °C	4.1 (1)	3.9 (2)	3.7 (3)

	YES	NO	COOLER ID #			
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT			TEMP °C	(1)	(2)	(3)

LAB USE ONLY
MAXXAM JOB # C454939

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	TINO NGULUBE	2024/07/18	09:00	1.	Kyle VanThaumaut	2024/07/19	1748
2.	Kyle VanThaumaut	2024/07/19	1900	2.	Amanda Hagen	2024/07/20	06:30
3.				3.			

SAMPLES
LABELED BY: MTG
VERIFIED BY: AHQ

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292205

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/01
Report #: R3536086
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455335
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292205

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/01
Report #: R3536086
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455335
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292205

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/01
Report #: R3536086
Version: 2 - Final

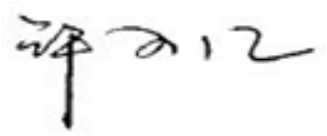
CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455335

Received: 2024/07/22, 13:17

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



Mary (Xiaohong) Xu
Customer Solutions Representative
01 Aug 2024 13:03:47

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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

Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU203	CRU204		
Sampling Date		2024/07/19 14:02	2024/07/19 15:20		
COC Number		292205	292205		
	UNITS	**AEMP-US-02**	**AEMP-US-01**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B447091
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B448295
Toluene	mg/L	<0.00040	<0.00040	0.00040	B448295
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B448295
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B448295
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B448295
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B448620
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B448620
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B448295
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	96	98		B447091
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	102	100		B448295
4-Bromofluorobenzene (sur.)	%	108	107		B448295
D4-1,2-Dichloroethane (sur.)	%	94	88		B448295

RDL = Reportable Detection Limit

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRU203	CRU204		
Sampling Date		2024/07/19 14:02	2024/07/19 15:20		
COC Number		292205	292205		
	UNITS	**AEMP-US-02**	**AEMP-US-01**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.22	<0.20	0.20	B448825
Nutrients					
Total Nitrogen (N)	mg/L	0.31 (1)	0.21 (1)	0.20	B452399

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU203		CRU204		
Sampling Date		2024/07/19 14:02		2024/07/19 15:20		
COC Number		292205		292205		
	UNITS	**AEMP-US-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	0.000048	B449080	0.00017	0.000020	B449080
Total Mercury (Hg)	ug/L	0.011	B451614	<0.0019	0.0019	B451614
Total Aluminum (Al)	mg/L	1.7	B458762	3.2	0.0030	B452558
Total Antimony (Sb)	mg/L	<0.00060	B458762	<0.00060	0.00060	B452558
Total Arsenic (As)	mg/L	0.00092	B458762	0.0033	0.00020	B452558
Total Barium (Ba)	mg/L	0.035	B458766	0.10	0.010	B452573
Total Beryllium (Be)	mg/L	<0.0010	B458762	<0.0010	0.0010	B452558
Total Boron (B)	mg/L	<0.020	B458766	0.025	0.020	B452573
Total Calcium (Ca)	mg/L	10	B458766	33	0.30	B452573
Total Chromium (Cr)	mg/L	0.0029	B458762	0.0052	0.0010	B452558
Total Cobalt (Co)	mg/L	0.00088	B458762	0.0033	0.00030	B452558
Total Copper (Cu)	mg/L	0.0019	B458762	0.0072	0.0010	B452558
Total Iron (Fe)	mg/L	1.8	B458766	6.6	0.060	B452573
Total Lead (Pb)	mg/L	0.0011	B458762	0.0034	0.00020	B452558
Total Lithium (Li)	mg/L	<0.020	B458766	<0.020	0.020	B452573
Total Magnesium (Mg)	mg/L	3.1	B458766	11	0.20	B452573
Total Manganese (Mn)	mg/L	0.024	B458766	0.11	0.0040	B452573
Total Molybdenum (Mo)	mg/L	0.00044	B458762	0.0014	0.00020	B452558
Total Nickel (Ni)	mg/L	0.0030	B458762	0.011	0.00050	B452558
Total Phosphorus (P)	mg/L	<0.10	B458766	0.12	0.10	B452573
Total Potassium (K)	mg/L	0.64	B458766	1.7	0.30	B452573
Total Selenium (Se)	mg/L	<0.00020	B458762	0.00047	0.00020	B452558
Total Silicon (Si)	mg/L	1.6	B458766	5.1	0.50	B452573
Total Silver (Ag)	mg/L	<0.00010	B458762	<0.00010	0.00010	B452558
Total Sodium (Na)	mg/L	2.2	B458766	8.5	0.50	B452573
Total Strontium (Sr)	mg/L	0.065	B458766	0.21	0.020	B452573
Total Sulphur (S)	mg/L	4.1	B458766	13	0.20	B452573
Total Thallium (Tl)	mg/L	<0.00020	B458762	<0.00020	0.00020	B452558
Total Tin (Sn)	mg/L	<0.0010	B458762	<0.0010	0.0010	B452558
Total Titanium (Ti)	mg/L	0.085	B458762	0.032	0.0010	B452558
Total Uranium (U)	mg/L	0.00032	B458762	0.00094	0.00010	B452558
RDL = Reportable Detection Limit						

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REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU203		CRU204		
Sampling Date		2024/07/19 14:02		2024/07/19 15:20		
COC Number		292205		292205		
	UNITS	**AEMP-US-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.0071	B458762	0.0097	0.0010	B452558
Total Zinc (Zn)	mg/L	0.0091	B458762	0.052	0.0030	B452558
RDL = Reportable Detection Limit						

Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU203			CRU203			CRU204		
Sampling Date		2024/07/19 14:02			2024/07/19 14:02			2024/07/19 15:20		
COC Number		292205			292205			292205		
	UNITS	**AEMP-US-02**	**RDL**	**QC Batch**	**AEMP-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	140	0.50	B448621				120	0.50	B448621
Ion Balance (% Difference)	%	2.7	N/A	B448624				1.2	N/A	B448624
Nitrate (N)	mg/L	0.090	0.010	B448622				0.11	0.010	B448622
Nitrate (NO3)	mg/L	0.40	0.044	B448626				0.47	0.044	B448626
Nitrite (NO2)	mg/L	<0.033	0.033	B448626				<0.033	0.033	B448626
Sulphide (as H2S)	mg/L	0.030	0.0020	B449088				0.030	0.0020	B449088
Demand Parameters										
Chemical Oxygen Demand	mg/L	12	10	B450983				11	10	B450983
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B448623				<0.000020	0.000020	B448623
Misc. Inorganics										
Conductivity	uS/cm	290	2.0	B452120				280	2.0	B452120
Dissolved Organic Carbon (C)	mg/L	3.8	0.50	B452982				3.8	0.50	B457234
pH	pH	7.78	N/A	B452117				7.76	N/A	B452117
Total Organic Carbon (C)	mg/L	3.0	0.50	B454264				3.2	0.50	B457260
Total Dissolved Solids	mg/L	180	10	B452377				180	10	B452377
Total Suspended Solids	mg/L	220	1.5	B454058	220	1.4	B454058	440 (1)	1.9	B454058
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B452112				<1.0	1.0	B452112
Alkalinity (Total as CaCO3)	mg/L	91	1.0	B452112				83	1.0	B452112
Bicarbonate (HCO3)	mg/L	110	1.0	B452112				100	1.0	B452112
Carbonate (CO3)	mg/L	<1.0	1.0	B452112				<1.0	1.0	B452112
Hydroxide (OH)	mg/L	<1.0	1.0	B452112				<1.0	1.0	B452112
Total Sulphide	mg/L	0.029	0.0018	B449830				0.029	0.0018	B449830
Chloride (Cl)	mg/L	8.3	1.0	B450415				11	1.0	B450415
Sulphate (SO4)	mg/L	47	1.0	B450415				43	1.0	B450415
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B451335				<0.015	0.015	B452989

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Detection limit raised based on sample volume used for analysis.

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Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU203			CRU203			CRU204		
Sampling Date		2024/07/19 14:02			2024/07/19 14:02			2024/07/19 15:20		
COC Number		292205			292205			292205		
	UNITS	**AEMP-US-02**	**RDL**	**QC Batch**	**AEMP-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B449924				<0.0030	0.0030	B449924
Nitrite (N)	mg/L	<0.010	0.010	B450936				<0.010	0.010	B450936
Nitrate plus Nitrite (N)	mg/L	0.090	0.010	B450936				0.11	0.010	B450936
Misc. Organics										
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B450322				<2.0	2.0	B450322
Physical Properties										
True Colour	PtCo units	9.0	2.0	B450297				9.5	2.0	B450297
Physical Properties										
Turbidity	NTU	160	0.10	B449456				270	0.10	B449456

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU203	CRU204		
Sampling Date		2024/07/19 14:02	2024/07/19 15:20		
COC Number		292205	292205		
	UNITS	**AEMP-US-02**	**AEMP-US-01**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B449091
Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B445873
Acridine	ug/L	<0.040	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Perylene	ug/L	<0.050	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	<0.20	0.20	B445873
Retene	ug/L	<0.050	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU203	CRU204		
Sampling Date		2024/07/19 14:02	2024/07/19 15:20		
COC Number		292205	292205		
	UNITS	**AEMP-US-02**	**AEMP-US-01**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C2-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C3-fluorene	ug/L	<0.050	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	121	112		B445873
D8-ACENAPHTHYLENE (sur.)	%	112	102		B445873
D8-NAPHTHALENE (sur.)	%	98	90		B445873
TERPHENYL-D14 (sur.)	%	129	120		B445873
RDL = Reportable Detection Limit					

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRU203	CRU204		
Sampling Date		2024/07/19 14:02	2024/07/19 15:20		
COC Number		292205	292205		
	UNITS	**AEMP-US-02**	**AEMP-US-01**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B451604
RDL = Reportable Detection Limit					

Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU203		CRU204			CRU204		
Sampling Date		2024/07/19 14:02		2024/07/19 15:20			2024/07/19 15:20		
COC Number		292205		292205			292205		
	UNITS	**AEMP-US-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Elements									
Dissolved Aluminum (Al)	mg/L	0.033	B452541	0.051	0.0030	B452541	0.042	0.0030	B452541
Dissolved Antimony (Sb)	mg/L	<0.00060	B452541	<0.00060	0.00060	B452541	<0.00060	0.00060	B452541
Dissolved Arsenic (As)	mg/L	0.00035	B452541	0.00033	0.00020	B452541	0.00031	0.00020	B452541
Dissolved Barium (Ba)	mg/L	0.052	B452036	0.043	0.010	B452036			
Dissolved Beryllium (Be)	mg/L	<0.0010	B452541	<0.0010	0.0010	B452541	<0.0010	0.0010	B452541
Dissolved Boron (B)	mg/L	<0.020	B452036	<0.020	0.020	B452036			
Dissolved Calcium (Ca)	mg/L	38	B455483	32	0.30	B452036			
Dissolved Chromium (Cr)	mg/L	<0.0010	B452541	<0.0010	0.0010	B452541	<0.0010	0.0010	B452541
Dissolved Cobalt (Co)	mg/L	<0.00030	B452541	<0.00030	0.00030	B452541	<0.00030	0.00030	B452541
Dissolved Copper (Cu)	mg/L	0.0012	B452541	<0.0010	0.0010	B452541	0.0011	0.0010	B452541
Dissolved Iron (Fe)	mg/L	<0.060	B452036	<0.060	0.060	B452036			
Dissolved Lead (Pb)	mg/L	<0.00020	B452541	<0.00020	0.00020	B452541	<0.00020	0.00020	B452541
Dissolved Lithium (Li)	mg/L	<0.020	B452036	0.038	0.020	B452036			
Dissolved Magnesium (Mg)	mg/L	11	B455483	9.8	0.20	B452036			
Dissolved Manganese (Mn)	mg/L	<0.0040	B452036	<0.0040	0.0040	B452036			
Dissolved Molybdenum (Mo)	mg/L	0.0012	B457337	0.00072	0.00020	B452541	0.00075	0.00020	B452541
Dissolved Nickel (Ni)	mg/L	0.00099	B452541	0.00083	0.00050	B452541	0.00084	0.00050	B452541
Dissolved Phosphorus (P)	mg/L	<0.10	B452036	<0.10	0.10	B452036			
Dissolved Potassium (K)	mg/L	0.91	B452036	0.94	0.30	B452036			
Dissolved Selenium (Se)	mg/L	0.00038	B452541	0.00034	0.00020	B452541	0.00032	0.00020	B452541
Dissolved Silicon (Si)	mg/L	1.5	B452036	1.4	0.50	B452036			
Dissolved Silver (Ag)	mg/L	<0.00010	B452541	<0.00010	0.00010	B452541	<0.00010	0.00010	B452541
Dissolved Sodium (Na)	mg/L	8.5	B455483	9.4	0.50	B452036			
Dissolved Strontium (Sr)	mg/L	0.24	B455483	0.21	0.020	B452036			
Dissolved Sulphur (S)	mg/L	16	B455483	14	0.20	B452036			
Dissolved Thallium (Tl)	mg/L	<0.00020	B452541	<0.00020	0.00020	B452541	<0.00020	0.00020	B452541
Dissolved Tin (Sn)	mg/L	<0.0010	B452541	<0.0010	0.0010	B452541	<0.0010	0.0010	B452541
Dissolved Titanium (Ti)	mg/L	<0.0010	B452541	<0.0010	0.0010	B452541	<0.0010	0.0010	B452541
Dissolved Uranium (U)	mg/L	0.00078	B457337	0.00062	0.00010	B452541	0.00060	0.00010	B452541
Dissolved Vanadium (V)	mg/L	<0.0010	B452541	<0.0010	0.0010	B452541	<0.0010	0.0010	B452541

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU203		CRU204			CRU204		
Sampling Date		2024/07/19 14:02		2024/07/19 15:20			2024/07/19 15:20		
COC Number		292205		292205			292205		
	UNITS	**AEMP-US-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	B452541	<0.0030	0.0030	B452541	<0.0030	0.0030	B452541

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU203
Sample ID: AEMP-US-02
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B448295	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452982	N/A	2024/07/25	Ming Dong
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B451614	2024/07/24	2024/07/24	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B458766	2024/07/30	2024/07/30	Sarah Dolan
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B458762	2024/07/30	2024/07/30	Kevin Huang
Ion Balance	CALC	B448624	N/A	2024/07/25	Automated Statchk
Ammonia-N (Total)	KONE	B451335	N/A	2024/07/24	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU203 Dup
Sample ID: AEMP-US-02
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong

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Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU204
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B448295	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B457234	N/A	2024/07/29	Jill Yuen
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B451614	2024/07/24	2024/07/24	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B452573	2024/07/25	2024/07/25	Hue Quyen Vuong
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B452558	2024/07/25	2024/07/26	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B452989	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B457260	N/A	2024/07/29	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU204 Dup
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao

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Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

GENERAL COMMENTS

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

Package 1	5.0°C

Note: Bottles listed on C of C, but not found in shipment: AEMP-US-01 the ammonia vial was received empty. Proceeded from the nutrients bottle (yellow cap) as it contains the same preservatives. Notified Alex Haigh via email.

Sample CRU203 [AEMP-US-02] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CRU204 [AEMP-US-01] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CRU203, Elements by ICPMS - Dissolved: Test repeated.
Sample CRU203, Elements by ICP - Dissolved: Test repeated.

Results relate only to the items tested.

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Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B448295	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		111	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		84	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B449456	DVN	Method Blank	Turbidity	2024/07/23	<0.10		NTU	
B449830	NJD	Method Blank	Total Sulphide	2024/07/23	<0.0018		mg/L	
B449924	YL7	Method Blank	Orthophosphate (P)	2024/07/23	<0.0030		mg/L	
B450297	TOR	Method Blank	True Colour	2024/07/23	<2.0		PtCo units	
B450322	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/25	<2.0		mg/L	
B450415	TOR	Method Blank	Chloride (Cl)	2024/07/23	<1.0		mg/L	
			Sulphate (SO4)	2024/07/23	<1.0		mg/L	
B450936	AFI	Method Blank	Nitrite (N)	2024/07/24	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/24	<0.010		mg/L	
B450983	AP1	Method Blank	Chemical Oxygen Demand	2024/07/24	<10		mg/L	
B451335	AFI	Method Blank	Total Ammonia (N)	2024/07/24	<0.015		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B451614	KHU	Method Blank	Total Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452036	VSC	Method Blank	Dissolved Iron (Fe)	2024/07/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/07/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/24	<0.30		mg/L	
B452112	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	
B452120	JVM	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452377	DVN	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	
B452399	YL7	Method Blank	Total Nitrogen (N)	2024/07/25	<0.020		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B452541	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452558	JAB	Method Blank	Total Aluminum (Al)	2024/07/26	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/26	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/26	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/26	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/26	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/26	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/26	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/26	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/26	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/26	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/26	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/26	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/26	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/26	<0.0010		mg/L	
			Total Uranium (U)	2024/07/26	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/26	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/26	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/26	<0.0010		mg/L	
B452573	HQV	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B452982	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/07/25	<0.50		mg/L	
B452989	AFI	Method Blank	Total Ammonia (N)	2024/07/25	<0.015		mg/L	
B454058	HE1	Method Blank	Total Suspended Solids	2024/07/26	<1.0		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B454264	JYU	Method Blank	Total Organic Carbon (C)	2024/07/26	<0.50		mg/L	
B455483	S1D	Method Blank	Dissolved Magnesium (Mg)	2024/07/26	<0.20		mg/L	
			Dissolved Sodium (Na)	2024/07/26	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/26	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/26	<0.20		mg/L	
			Dissolved Calcium (Ca)	2024/07/26	<0.30		mg/L	
B457234	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B457260	JYU	Method Blank	Total Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B457337	KKC	Method Blank	Dissolved Molybdenum (Mo)	2024/07/29	<0.00020		mg/L	
			Dissolved Uranium (U)	2024/07/29	<0.00010		mg/L	
B458762	KH2	Method Blank	Total Aluminum (Al)	2024/07/30	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/30	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/30	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/30	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/30	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/30	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/30	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/30	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/30	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/30	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/30	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/30	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/30	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/30	<0.0010		mg/L	
			Total Uranium (U)	2024/07/30	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/30	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/30	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/30	<0.0010		mg/L	
B458766	S1D	Method Blank	Total Iron (Fe)	2024/07/30	<0.060		mg/L	
			Total Lithium (Li)	2024/07/30	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/30	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/30	<0.0040		mg/L	
			Total Potassium (K)	2024/07/30	<0.30		mg/L	
			Total Sodium (Na)	2024/07/30	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/30	<0.020		mg/L	
			Total Sulphur (S)	2024/07/30	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/30	<0.10		mg/L	
			Total Barium (Ba)	2024/07/30	<0.010		mg/L	
			Total Silicon (Si)	2024/07/30	<0.50		mg/L	
			Total Boron (B)	2024/07/30	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/30	<0.30		mg/L	
B454058	HE1	RPD [CRU203-01]	Total Suspended Solids	2024/07/26	2.0		%	20
B452541	JAB	RPD [CRU204-05]	Dissolved Aluminum (Al)	2024/07/25	18		%	20
			Dissolved Chromium (Cr)	2024/07/25	NC		%	20
			Dissolved Cobalt (Co)	2024/07/25	NC		%	20
			Dissolved Copper (Cu)	2024/07/25	5.4		%	20
			Dissolved Lead (Pb)	2024/07/25	NC		%	20
			Dissolved Antimony (Sb)	2024/07/25	NC		%	20
			Dissolved Molybdenum (Mo)	2024/07/25	3.9		%	20
			Dissolved Nickel (Ni)	2024/07/25	0.26		%	20
			Dissolved Selenium (Se)	2024/07/25	5.2		%	20
			Dissolved Silver (Ag)	2024/07/25	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 Arsenic (As)	2024/07/25	4.2		%	20
			Dissolved Thallium (Tl)	2024/07/25	NC		%	20
			Dissolved Tin (Sn)	2024/07/25	NC		%	20
			Dissolved Titanium (Ti)	2024/07/25	NC		%	20
			Dissolved Uranium (U)	2024/07/25	2.8		%	20
			Dissolved Vanadium (V)	2024/07/25	NC		%	20
			Dissolved Zinc (Zn)	2024/07/25	NC		%	20
			Dissolved Beryllium (Be)	2024/07/25	NC		%	20
B450322	RRA	Matrix Spike [CRU203-10]	Total Petroleum Hydrocarbon	2024/07/25		86	%	70 - 130
B452541	JAB	Matrix Spike [CRU204-05]	Dissolved Aluminum (Al)	2024/07/25		NC	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/25		99	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		100	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		98	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		98	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		102	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		98	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		100	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		101	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		98	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		99	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		101	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		99	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		99	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B454058	HE1	Matrix Spike [CRU203-01]	Total Suspended Solids	2024/07/26		NC	%	80 - 120
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2024/07/30		90	%	50 - 130
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B448295	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		94	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		101	%	50 - 140
			Benzene	2024/07/24		102	%	60 - 130
			Toluene	2024/07/24		96	%	60 - 130
			Ethylbenzene	2024/07/24		99	%	60 - 130
			m & p-Xylene	2024/07/24		89	%	60 - 130
			o-Xylene	2024/07/24		90	%	60 - 130
			F1 (C6-C10)	2024/07/24		104	%	60 - 140
B449456	DVN	LCS	Turbidity	2024/07/23		99	%	80 - 120
B449830	NJD	LCS	Total Sulphide	2024/07/23		100	%	80 - 120
B449924	YL7	LCS	Orthophosphate (P)	2024/07/23		101	%	80 - 120
B450297	TOR	LCS	True Colour	2024/07/23		107	%	80 - 120
B450322	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/25		89	%	70 - 130
B450415	TOR	LCS	Chloride (Cl)	2024/07/23		105	%	80 - 120
			Sulphate (SO4)	2024/07/23		105	%	80 - 120
B450936	AFI	LCS	Nitrite (N)	2024/07/24		104	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/24		108	%	80 - 120
B450983	AP1	LCS	Chemical Oxygen Demand	2024/07/24		101	%	80 - 120
B451335	AFI	LCS	Total Ammonia (N)	2024/07/24		103	%	80 - 120
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B451614	KHU	LCS	Total Mercury (Hg)	2024/07/24		101	%	80 - 120
B452036	VSC	LCS	Dissolved Iron (Fe)	2024/07/24		93	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		93	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		91	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		97	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		88	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		93	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/24		95	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		90	%	80 - 120
			Dissolved Silicon (Si)	2024/07/24		88	%	80 - 120
			Dissolved Boron (B)	2024/07/24		91	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/24		93	%	80 - 120
B452112	JVM	LCS	Alkalinity (Total as CaCO3)	2024/07/25		100	%	80 - 120
B452117	JVM	LCS	pH	2024/07/25		100	%	97 - 103
B452120	JVM	LCS	Conductivity	2024/07/25		101	%	90 - 110
B452377	DVN	LCS	Total Dissolved Solids	2024/07/26		98	%	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
B452399	YL7	LCS	Total Nitrogen (N)	2024/07/25		105	%	80 - 120
B452541	JAB	LCS	Dissolved Aluminum (Al)	2024/07/25		103	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/25		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		104	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		103	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		104	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		98	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		100	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		106	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B452558	JAB	LCS	Total Aluminum (Al)	2024/07/26		101	%	80 - 120
			Total Chromium (Cr)	2024/07/26		99	%	80 - 120
			Total Cobalt (Co)	2024/07/26		99	%	80 - 120
			Total Copper (Cu)	2024/07/26		99	%	80 - 120
			Total Lead (Pb)	2024/07/26		100	%	80 - 120
			Total Antimony (Sb)	2024/07/26		103	%	80 - 120
			Total Molybdenum (Mo)	2024/07/26		101	%	80 - 120
			Total Nickel (Ni)	2024/07/26		100	%	80 - 120
			Total Selenium (Se)	2024/07/26		101	%	80 - 120
			Total Silver (Ag)	2024/07/26		99	%	80 - 120
			Total Arsenic (As)	2024/07/26		101	%	80 - 120
			Total Thallium (Tl)	2024/07/26		102	%	80 - 120
			Total Tin (Sn)	2024/07/26		97	%	80 - 120
			Total Titanium (Ti)	2024/07/26		96	%	80 - 120
			Total Uranium (U)	2024/07/26		102	%	80 - 120
			Total Vanadium (V)	2024/07/26		100	%	80 - 120
			Total Zinc (Zn)	2024/07/26		98	%	80 - 120
			Total Beryllium (Be)	2024/07/26		99	%	80 - 120
B452573	HQV	LCS	Total Iron (Fe)	2024/07/25		98	%	80 - 120
			Total Lithium (Li)	2024/07/25		89	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		91	%	80 - 120
			Total Manganese (Mn)	2024/07/25		91	%	80 - 120
			Total Potassium (K)	2024/07/25		90	%	80 - 120
			Total Sodium (Na)	2024/07/25		93	%	80 - 120
			Total Strontium (Sr)	2024/07/25		89	%	80 - 120
			Total Sulphur (S)	2024/07/25		97	%	80 - 120
			Total Phosphorus (P)	2024/07/25		96	%	80 - 120
			Total Barium (Ba)	2024/07/25		91	%	80 - 120
			Total Silicon (Si)	2024/07/25		97	%	80 - 120
			Total Boron (B)	2024/07/25		94	%	80 - 120
			Total Calcium (Ca)	2024/07/25		88	%	80 - 120
B452982	MDO	LCS	Dissolved Organic Carbon (C)	2024/07/25		104	%	80 - 120
B452989	AFI	LCS	Total Ammonia (N)	2024/07/25		103	%	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
B454058	HE1	LCS	Total Suspended Solids	2024/07/26		103	%	80 - 120
B454264	JYU	LCS	Total Organic Carbon (C)	2024/07/26		100	%	80 - 120
B455483	S1D	LCS	Dissolved Magnesium (Mg)	2024/07/26		92	%	80 - 120
			Dissolved Sodium (Na)	2024/07/26		98	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/26		91	%	80 - 120
			Dissolved Sulphur (S)	2024/07/26		92	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/26		95	%	80 - 120
B457234	JYU	LCS	Dissolved Organic Carbon (C)	2024/07/29		99	%	80 - 120
B457260	JYU	LCS	Total Organic Carbon (C)	2024/07/29		100	%	80 - 120
B457337	KKC	LCS	Dissolved Molybdenum (Mo)	2024/07/29		109	%	80 - 120
			Dissolved Uranium (U)	2024/07/29		113	%	80 - 120
B458762	KH2	LCS	Total Aluminum (Al)	2024/07/30		111	%	80 - 120
			Total Chromium (Cr)	2024/07/30		106	%	80 - 120
			Total Cobalt (Co)	2024/07/30		107	%	80 - 120
			Total Copper (Cu)	2024/07/30		106	%	80 - 120
			Total Lead (Pb)	2024/07/30		108	%	80 - 120
			Total Antimony (Sb)	2024/07/30		108	%	80 - 120
			Total Molybdenum (Mo)	2024/07/30		107	%	80 - 120
			Total Nickel (Ni)	2024/07/30		106	%	80 - 120
			Total Selenium (Se)	2024/07/30		105	%	80 - 120
			Total Silver (Ag)	2024/07/30		106	%	80 - 120
			Total Arsenic (As)	2024/07/30		105	%	80 - 120
			Total Thallium (Tl)	2024/07/30		110	%	80 - 120
			Total Tin (Sn)	2024/07/30		106	%	80 - 120
			Total Titanium (Ti)	2024/07/30		105	%	80 - 120
			Total Uranium (U)	2024/07/30		106	%	80 - 120
			Total Vanadium (V)	2024/07/30		107	%	80 - 120
			Total Zinc (Zn)	2024/07/30		103	%	80 - 120
			Total Beryllium (Be)	2024/07/30		105	%	80 - 120
B458766	S1D	LCS	Total Iron (Fe)	2024/07/30		101	%	80 - 120
			Total Lithium (Li)	2024/07/30		98	%	80 - 120
			Total Magnesium (Mg)	2024/07/30		99	%	80 - 120
			Total Manganese (Mn)	2024/07/30		92	%	80 - 120
			Total Potassium (K)	2024/07/30		98	%	80 - 120
			Total Sodium (Na)	2024/07/30		95	%	80 - 120
			Total Strontium (Sr)	2024/07/30		97	%	80 - 120
			Total Sulphur (S)	2024/07/30		97	%	80 - 120
			Total Phosphorus (P)	2024/07/30		99	%	80 - 120
			Total Barium (Ba)	2024/07/30		99	%	80 - 120
			Total Silicon (Si)	2024/07/30		98	%	80 - 120
			Total Boron (B)	2024/07/30		93	%	80 - 120
			Total Calcium (Ca)	2024/07/30		95	%	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
B452399	YL7	SRM	Total Nitrogen (N)	2024/07/25		104	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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).

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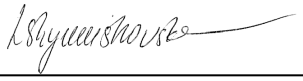
Bureau Veritas Job #: C455335
Report Date: 2024/08/01

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

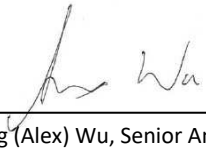
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



Qiliang (Alex) Wu, Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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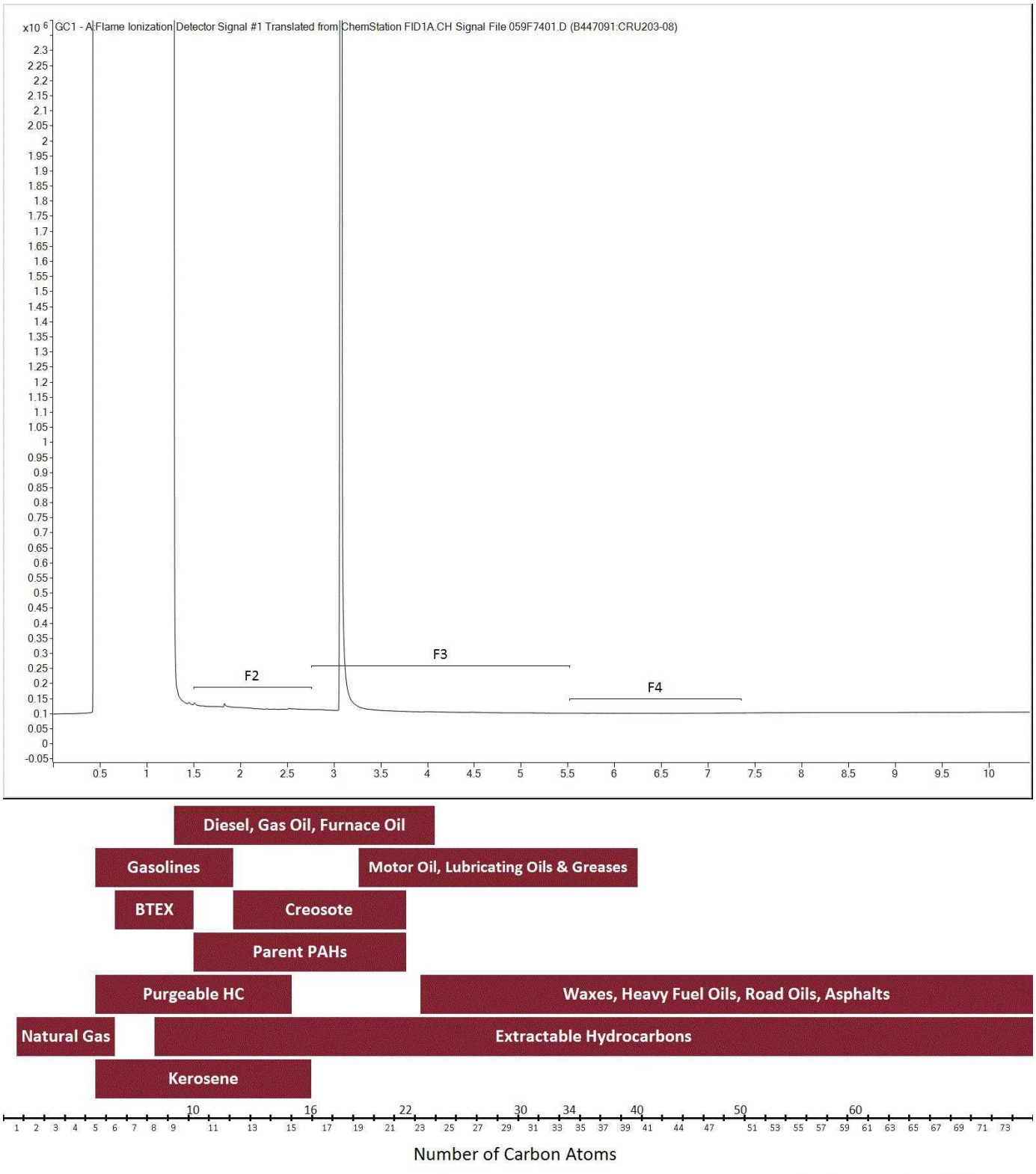
Bureau Veritas Job #: C455335
Report Date: 2024/08/01
Bureau Veritas Sample: CRU203

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



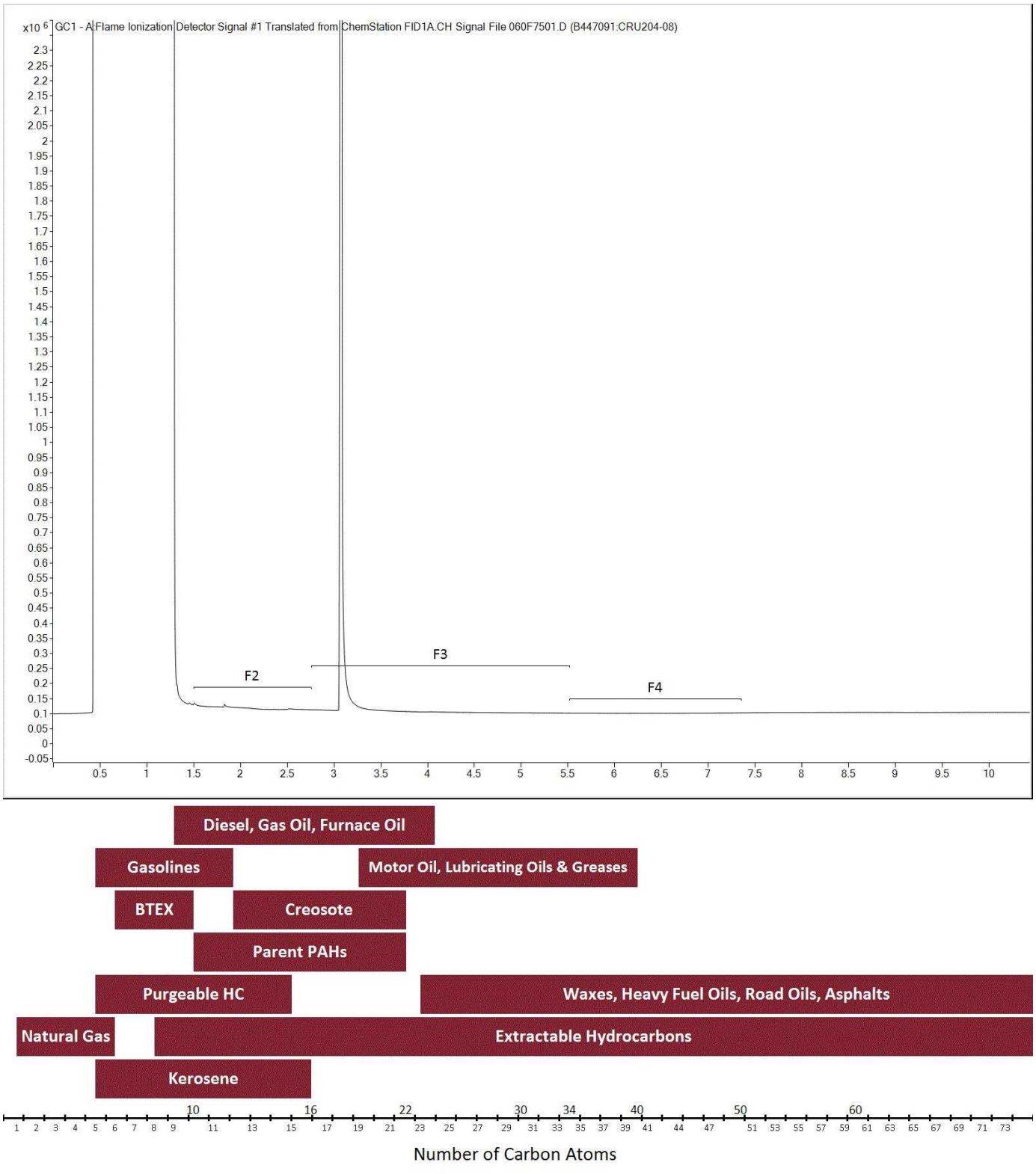
hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Bureau Veritas Job #: C455335
Report Date: 2024/08/01
Bureau Veritas Sample: CRU204

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 292205

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 897 6249	Ph: 587 897 6249
Sampler Name (Print): Stacy Gibb / Tino Ngulube	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1	AEMP-US-02		X			18	2024/07/19	14:02	X	
2	AEMP-US-01		X			18	2024/07/19	15:20	X	
3										
4										
5										
6										
7										
8										
9										
10										

ANALYSIS REQUESTED

	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	Oil and Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (total) TKN	Orthophosphate	Sulphur, Total + Dissolved	COD	Alkylated PAH, TPH
1		X	X							X	X					X			X		X	X	X	X	X	X
2		X	X							X	X					X			X		X	X	X	X	X	X

med2-2024-07-691

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): NA

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) EAL ☐ Other

SPECIAL INSTRUCTIONS: email canada_chemistry@worley.com cacal-IOR data track@worley.com stacy.gibb@worley.com
IES A2601436

JARS USED & NOT SUBMITTED (Enter N/A for Water): NA

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT	✓						
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

MCAL

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT	✓						
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT							
SEAL INTACT							
COOLING MEDIA PRESENT							

LAB USE ONLY
MAXXAM JOB # C455335

SAMPLES
LABELED BY: SAS
VERIFIED BY: SMA

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1. Stacy Gibb	2024/07/21	10:30	1. BRENTON MAH	2024/07/22	13:17
2. Kyle VanTheumat	2024/07/22	1800	2. NAVDEEP GILL	2024/07/23	07:00
3.			3.		

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292210

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537558
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455339
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	1	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	1	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	1		Auto Calc
Cadmium - low level CCME - Dissolved (1)	1		Auto Calc
Cadmium - low level CCME (Total) (1)	1		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	1	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	1	AB SOP-00016	SM 24 5220D m
True Colour (1)	1	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	1	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	1	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	1	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	1		Auto Calc
Hardness (1)	1		Auto Calc
Mercury (Dissolved) by CV (1, 4)	1	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	1	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	1	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	1	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	1	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	1	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	1		Auto Calc
Ammonia-N (Total) (1)	1	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	1		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	1	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	1		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	1	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	1		Auto Calc
pH @25°C (1, 7)	1	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	1	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	1	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	1	AB SOP-00065	SM 24 2540 C m

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292210

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537558
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455339
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	1	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	1	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	1	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	1	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	1	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	1	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292210

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537558
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455339

Received: 2024/07/22, 13:17

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
06 Aug 2024 11:15:23

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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

Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU216		
Sampling Date		2024/07/18 13:15		
COC Number		292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B447091
Volatiles				
Benzene	mg/L	<0.00040	0.00040	B448295
Toluene	mg/L	<0.00040	0.00040	B448295
Ethylbenzene	mg/L	<0.00040	0.00040	B448295
m & p-Xylene	mg/L	<0.00080	0.00080	B448295
o-Xylene	mg/L	<0.00040	0.00040	B448295
Xylenes (Total)	mg/L	<0.00089	0.00089	B448620
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	B448620
F1 (C6-C10)	mg/L	<0.10	0.10	B448295
Extraction Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	97		B447091
Instrument Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	100		B448295
4-Bromofluorobenzene (sur.)	%	110		B448295
D4-1,2-Dichloroethane (sur.)	%	87		B448295
RDL = Reportable Detection Limit				

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRU216		
Sampling Date		2024/07/18 13:15		
COC Number		292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**
Calculated Parameters				
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.098	0.020	B448825
Nutrients				
Total Nitrogen (N)	mg/L	0.17	0.020	B452399
RDL = Reportable Detection Limit				

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU216			CRU216		
Sampling Date		2024/07/18 13:15			2024/07/18 13:15		
COC Number		292210			292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**
Elements							
Total Cadmium (Cd)	mg/L	<0.000020	0.000020	B449080			
Total Mercury (Hg)	ug/L	<0.0019	0.0019	B452451	<0.0019	0.0019	B452451
Total Aluminum (Al)	mg/L	0.088	0.0030	B453406			
Total Antimony (Sb)	mg/L	<0.00060	0.00060	B453406			
Total Arsenic (As)	mg/L	<0.00020	0.00020	B453406			
Total Barium (Ba)	mg/L	0.086	0.010	B453410			
Total Beryllium (Be)	mg/L	<0.0010	0.0010	B453406			
Total Boron (B)	mg/L	0.038	0.020	B453410			
Total Calcium (Ca)	mg/L	79	0.30	B453410			
Total Chromium (Cr)	mg/L	<0.0010	0.0010	B453406			
Total Cobalt (Co)	mg/L	<0.00030	0.00030	B453406			
Total Copper (Cu)	mg/L	<0.0010	0.0010	B453406			
Total Iron (Fe)	mg/L	0.22	0.060	B453410			
Total Lead (Pb)	mg/L	<0.00020	0.00020	B453406			
Total Lithium (Li)	mg/L	<0.020	0.020	B453410			
Total Magnesium (Mg)	mg/L	31	0.20	B453410			
Total Manganese (Mn)	mg/L	0.011	0.0040	B453410			
Total Molybdenum (Mo)	mg/L	0.0018	0.00020	B453406			
Total Nickel (Ni)	mg/L	0.0010	0.00050	B453406			
Total Phosphorus (P)	mg/L	<0.10	0.10	B453410			
Total Potassium (K)	mg/L	1.2	0.30	B453410			
Total Selenium (Se)	mg/L	<0.00020	0.00020	B453406			
Total Silicon (Si)	mg/L	2.5	0.50	B453410			
Total Silver (Ag)	mg/L	<0.00010	0.00010	B453406			
Total Sodium (Na)	mg/L	26	0.50	B453410			
Total Strontium (Sr)	mg/L	1.6	0.020	B453410			
Total Sulphur (S)	mg/L	51	0.20	B453410			
Total Thallium (Tl)	mg/L	<0.00020	0.00020	B453406			
Total Tin (Sn)	mg/L	<0.0010	0.0010	B453406			
Total Titanium (Ti)	mg/L	0.0021	0.0010	B453406			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU216			CRU216		
Sampling Date		2024/07/18 13:15			2024/07/18 13:15		
COC Number		292210			292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**
Total Uranium (U)	mg/L	0.0011	0.00010	B453406			
Total Vanadium (V)	mg/L	<0.0010	0.0010	B453406			
Total Zinc (Zn)	mg/L	<0.0030	0.0030	B453406			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU216			CRU216		
Sampling Date		2024/07/18 13:15			2024/07/18 13:15		
COC Number		292210			292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L	330	0.50	B448621			
Ion Balance (% Difference)	%	0.47	N/A	B448624			
Nitrate (N)	mg/L	0.074	0.010	B448622			
Nitrate (NO3)	mg/L	0.33	0.044	B448626			
Nitrite (NO2)	mg/L	<0.033	0.033	B448626			
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B449088			
Demand Parameters							
Chemical Oxygen Demand	mg/L	11	10	B452549			
Elements							
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B448623			
Misc. Inorganics							
Conductivity	uS/cm	740	2.0	B452120			
Dissolved Organic Carbon (C)	mg/L	3.2	0.50	B452640			
pH	pH	8.34	N/A	B452117			
Total Organic Carbon (C)	mg/L	2.4	0.50	B452677			
Total Dissolved Solids	mg/L	460	10	B452355			
Total Suspended Solids	mg/L	4.1	0.99	B452364			
Anions							
Alkalinity (PP as CaCO3)	mg/L	1.4	1.0	B452112			
Alkalinity (Total as CaCO3)	mg/L	180	1.0	B452112			
Bicarbonate (HCO3)	mg/L	210	1.0	B452112			
Carbonate (CO3)	mg/L	1.7	1.0	B452112			
Hydroxide (OH)	mg/L	<1.0	1.0	B452112			
Total Sulphide	mg/L	<0.0018	0.0018	B449830			
Chloride (Cl)	mg/L	33	1.0	B450415			
Sulphate (SO4)	mg/L	170	5.0	B450415			
Nutrients							
Total Ammonia (N)	mg/L	<0.015	0.015	B452700			
Orthophosphate (P)	mg/L	<0.0030	0.0030	B449924			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU216			CRU216		
Sampling Date		2024/07/18 13:15			2024/07/18 13:15		
COC Number		292210			292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B450936			
Nitrate plus Nitrite (N)	mg/L	0.074	0.010	B450936			
Misc. Organics							
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B450322			
Physical Properties							
True Colour	PtCo units	6.3	2.0	B450297			
Physical Properties							
Turbidity	NTU	2.9	0.10	B449456	3.1	0.10	B449456

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU216		
Sampling Date		2024/07/18 13:15		
COC Number		292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**
Polycyclic Aromatics				
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	0.000010	B449091
Acenaphthene	ug/L	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	0.10	B445873
Acridine	ug/L	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	0.050	B445873
Perylene	ug/L	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	0.20	B445873
Retene	ug/L	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	0.10	B445873
C3-Naphthalene	ug/L	<0.10	0.10	B445873
C4-Naphthalene	ug/L	<0.10	0.10	B445873
C2-Naphthalene	ug/L	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	0.020	B445873
C1-biphenyl	ug/L	<0.020	0.020	B445873
RDL = Reportable Detection Limit				

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU216		
Sampling Date		2024/07/18 13:15		
COC Number		292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	0.050	B445873
C2-fluorene	ug/L	<0.050	0.050	B445873
C3-fluorene	ug/L	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	120		B445873
D8-ACENAPHTHYLENE (sur.)	%	111		B445873
D8-NAPHTHALENE (sur.)	%	101		B445873
TERPHENYL-D14 (sur.)	%	129		B445873
RDL = Reportable Detection Limit				

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRU216		
Sampling Date		2024/07/18 13:15		
COC Number		292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**
Elements				
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	B451604
RDL = Reportable Detection Limit				

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU216		
Sampling Date		2024/07/18 13:15		
COC Number		292210		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**
Elements				
Dissolved Aluminum (Al)	mg/L	0.0081	0.0030	B452541
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	B452541
Dissolved Arsenic (As)	mg/L	0.00020	0.00020	B452541
Dissolved Barium (Ba)	mg/L	0.083	0.010	B452036
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	B452541
Dissolved Boron (B)	mg/L	0.034	0.020	B452036
Dissolved Calcium (Ca)	mg/L	81	0.30	B452036
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	B452541
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00030	B452541
Dissolved Copper (Cu)	mg/L	<0.0010	0.0010	B452541
Dissolved Iron (Fe)	mg/L	<0.060	0.060	B452036
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	B452541
Dissolved Lithium (Li)	mg/L	<0.020	0.020	B452036
Dissolved Magnesium (Mg)	mg/L	32	0.20	B452036
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0040	B452036
Dissolved Molybdenum (Mo)	mg/L	0.0017	0.00020	B452541
Dissolved Nickel (Ni)	mg/L	0.00061	0.00050	B452541
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	B452036
Dissolved Potassium (K)	mg/L	1.3	0.30	B452036
Dissolved Selenium (Se)	mg/L	<0.00020	0.00020	B452541
Dissolved Silicon (Si)	mg/L	2.3	0.50	B452036
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	B452541
Dissolved Sodium (Na)	mg/L	27	0.50	B452036
Dissolved Strontium (Sr)	mg/L	1.6	0.020	B452036
Dissolved Sulphur (S)	mg/L	58	0.20	B452036
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	B452541
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	B452541
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	B452541
Dissolved Uranium (U)	mg/L	0.0011	0.00010	B452541
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	B452541
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	B452541
RDL = Reportable Detection Limit				

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Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU216
Sample ID: AEMP-US-04
Matrix: Water

Collected: 2024/07/18
Relinquished:
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B448295	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/27	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B452549	N/A	2024/07/25	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452640	N/A	2024/07/25	Jill Yuen
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453410	2024/07/25	2024/07/26	Hue Quyen Vuong
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453406	2024/07/25	2024/07/26	Kristijan Kovac
Ion Balance	CALC	B448624	N/A	2024/07/25	Automated Statchk
Ammonia-N (Total)	KONE	B452700	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452355	2024/07/25	2024/07/26	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B452677	N/A	2024/07/25	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B452364	2024/07/25	2024/07/25	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU216 Dup
Sample ID: AEMP-US-04
Matrix: Water

Collected: 2024/07/18
Relinquished:
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

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Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

GENERAL COMMENTS

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

Package 1	5.7°C

Note: C of C information incomplete
Relinquished by information incomplete. Relinquished by time is missing. Proceeding with the analysis
Notified Alex Haigh via email

Note: Samples received after hold time
Samples received past hold time for Nitrate/Nitrite and Orthoposphate analysis. Proceeding with the analysis
Notified Alex Haigh via email

Sample CRU216 [AEMP-US-04] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CRU216	AEMP-US-04	Water	NO23AC-W	NUTS	Sample	#11 Past Hold Time	#16 No Repeat-Late Delivery	This may increase the uncertainty associated with these results.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B448295	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		111	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		84	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B449456	DVN	Method Blank	Turbidity	2024/07/23	<0.10		NTU	
B449830	NJD	Method Blank	Total Sulphide	2024/07/23	<0.0018		mg/L	
B449924	YL7	Method Blank	Orthophosphate (P)	2024/07/23	<0.0030		mg/L	
B450297	TOR	Method Blank	True Colour	2024/07/23	<2.0		PtCo units	
B450322	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/25	<2.0		mg/L	
B450415	TOR	Method Blank	Chloride (Cl)	2024/07/23	<1.0		mg/L	
			Sulphate (SO4)	2024/07/23	<1.0		mg/L	
B450936	AFI	Method Blank	Nitrite (N)	2024/07/24	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/24	<0.010		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452036	VSC	Method Blank	Dissolved Iron (Fe)	2024/07/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/07/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/24	<0.30		mg/L	
B452112	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	
B452120	JVM	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452355	TNY	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	
B452364	HE1	Method Blank	Total Suspended Solids	2024/07/25	<1.0		mg/L	
B452399	YL7	Method Blank	Total Nitrogen (N)	2024/07/25	<0.020		mg/L	
B452451	KHU	Method Blank	Total Mercury (Hg)	2024/07/26	<0.0019		ug/L	
B452541	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/25	<0.0030		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452549	AP1	Method Blank	Chemical Oxygen Demand	2024/07/25	<10		mg/L	
B452640	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/07/25	<0.50		mg/L	
B452677	JYU	Method Blank	Total Organic Carbon (C)	2024/07/25	<0.50		mg/L	
B452700	AFI	Method Blank	Total Ammonia (N)	2024/07/25	<0.015		mg/L	
B453406	KKC	Method Blank	Total Aluminum (Al)	2024/07/26	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/26	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/26	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/26	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/26	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/26	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/26	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/26	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/26	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/26	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/26	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/26	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/26	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/26	<0.0010		mg/L	
			Total Uranium (U)	2024/07/26	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/26	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/26	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/26	<0.0010		mg/L	
B453410	HQV	Method Blank	Total Iron (Fe)	2024/07/26	<0.060		mg/L	
			Total Lithium (Li)	2024/07/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/26	<0.0040		mg/L	
			Total Potassium (K)	2024/07/26	<0.30		mg/L	
			Total Sodium (Na)	2024/07/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/26	<0.020		mg/L	
			Total Sulphur (S)	2024/07/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/26	<0.10		mg/L	
			Total Barium (Ba)	2024/07/26	<0.010		mg/L	
			Total Silicon (Si)	2024/07/26	<0.50		mg/L	
			Total Boron (B)	2024/07/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/26	<0.30		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B449456	DVN	RPD [CRU216-14]	Turbidity	2024/07/23	5.7		%	20
B452451	KHU	RPD [CRU216-09]	Total Mercury (Hg)	2024/07/26	NC		%	20
B445873	DM	Matrix Spike [CRU216-13]	D10-ANTHRACENE (sur.)	2024/07/30		108	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		104	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		100	%	50 - 130
			Acenaphthene	2024/07/30		90	%	50 - 130
			Acenaphthylene	2024/07/30		90	%	50 - 130
			Acridine	2024/07/30		98	%	50 - 130
			Anthracene	2024/07/30		82	%	50 - 130
			Benzo(a)anthracene	2024/07/30		98	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		101	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		100	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		97	%	50 - 130
			Benzo(a)pyrene	2024/07/30		103	%	50 - 130
			Benzo(e)pyrene	2024/07/30		89	%	50 - 130
			Chrysene	2024/07/30		102	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		110	%	50 - 130
			Fluoranthene	2024/07/30		97	%	50 - 130
			Fluorene	2024/07/30		95	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		100	%	50 - 130
			2-Methylnaphthalene	2024/07/30		83	%	50 - 130
			Naphthalene	2024/07/30		86	%	50 - 130
			Phenanthrene	2024/07/30		107	%	50 - 130
			Perylene	2024/07/30		91	%	50 - 130
			Pyrene	2024/07/30		98	%	50 - 130
			Quinoline	2024/07/30		101	%	50 - 130
			C1-Naphthalene	2024/07/30		72	%	50 - 130
			C3-Naphthalene	2024/07/30		90	%	50 - 130
			C2-Naphthalene	2024/07/30		85	%	50 - 130
			C1-biphenyl	2024/07/30		83	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		97	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		93	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		95	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		81	%	30 - 130
			1-Methylnaphthalene	2024/07/30		72	%	50 - 130
B451604	KHU	Matrix Spike [CRU216-10]	Dissolved Mercury (Hg)	2024/07/24		104	%	80 - 120
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130
			Pyrene	2024/07/30		90	%	50 - 130
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B448295	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		94	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		101	%	50 - 140
			Benzene	2024/07/24		102	%	60 - 130
			Toluene	2024/07/24		96	%	60 - 130
			Ethylbenzene	2024/07/24		99	%	60 - 130
			m & p-Xylene	2024/07/24		89	%	60 - 130
			o-Xylene	2024/07/24		90	%	60 - 130
			F1 (C6-C10)	2024/07/24		104	%	60 - 140
B449456	DVN	LCS	Turbidity	2024/07/23		99	%	80 - 120
B449830	NJD	LCS	Total Sulphide	2024/07/23		100	%	80 - 120
B449924	YL7	LCS	Orthophosphate (P)	2024/07/23		101	%	80 - 120
B450297	TOR	LCS	True Colour	2024/07/23		107	%	80 - 120
B450322	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/25		89	%	70 - 130
B450415	TOR	LCS	Chloride (Cl)	2024/07/23		105	%	80 - 120
			Sulphate (SO4)	2024/07/23		105	%	80 - 120
B450936	AFI	LCS	Nitrite (N)	2024/07/24		104	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/24		108	%	80 - 120
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B452036	VSC	LCS	Dissolved Iron (Fe)	2024/07/24		93	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		93	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		91	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		97	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		88	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		93	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/24		95	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		90	%	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 Silicon (Si)	2024/07/24		88	%	80 - 120
			Dissolved Boron (B)	2024/07/24		91	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/24		93	%	80 - 120
B452112	JVM	LCS	Alkalinity (Total as CaCO3)	2024/07/25		100	%	80 - 120
B452117	JVM	LCS	pH	2024/07/25		100	%	97 - 103
B452120	JVM	LCS	Conductivity	2024/07/25		101	%	90 - 110
B452355	TNY	LCS	Total Dissolved Solids	2024/07/26		98	%	80 - 120
B452364	HE1	LCS	Total Suspended Solids	2024/07/25		91	%	80 - 120
B452399	YL7	LCS	Total Nitrogen (N)	2024/07/25		105	%	80 - 120
B452451	KHU	LCS	Total Mercury (Hg)	2024/07/26		107	%	80 - 120
B452541	JAB	LCS	Dissolved Aluminum (Al)	2024/07/25		103	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/25		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		104	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		103	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		104	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		98	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		100	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		106	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B452549	AP1	LCS	Chemical Oxygen Demand	2024/07/25		101	%	80 - 120
B452640	JYU	LCS	Dissolved Organic Carbon (C)	2024/07/25		102	%	80 - 120
B452677	JYU	LCS	Total Organic Carbon (C)	2024/07/25		104	%	80 - 120
B452700	AFI	LCS	Total Ammonia (N)	2024/07/25		101	%	80 - 120
B453406	KKC	LCS	Total Aluminum (Al)	2024/07/26		97	%	80 - 120
			Total Chromium (Cr)	2024/07/26		97	%	80 - 120
			Total Cobalt (Co)	2024/07/26		97	%	80 - 120
			Total Copper (Cu)	2024/07/26		97	%	80 - 120
			Total Lead (Pb)	2024/07/26		99	%	80 - 120
			Total Antimony (Sb)	2024/07/26		104	%	80 - 120
			Total Molybdenum (Mo)	2024/07/26		98	%	80 - 120
			Total Nickel (Ni)	2024/07/26		97	%	80 - 120
			Total Selenium (Se)	2024/07/26		104	%	80 - 120
			Total Silver (Ag)	2024/07/26		95	%	80 - 120
			Total Arsenic (As)	2024/07/26		102	%	80 - 120
			Total Thallium (Tl)	2024/07/26		100	%	80 - 120
			Total Tin (Sn)	2024/07/26		96	%	80 - 120
			Total Titanium (Ti)	2024/07/26		96	%	80 - 120
			Total Uranium (U)	2024/07/26		100	%	80 - 120
			Total Vanadium (V)	2024/07/26		99	%	80 - 120
			Total Zinc (Zn)	2024/07/26		99	%	80 - 120
			Total Beryllium (Be)	2024/07/26		97	%	80 - 120
B453410	HQV	LCS	Total Iron (Fe)	2024/07/26		94	%	80 - 120
			Total Lithium (Li)	2024/07/26		94	%	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
			Total Magnesium (Mg)	2024/07/26		97	%	80 - 120
			Total Manganese (Mn)	2024/07/26		93	%	80 - 120
			Total Potassium (K)	2024/07/26		96	%	80 - 120
			Total Sodium (Na)	2024/07/26		94	%	80 - 120
			Total Strontium (Sr)	2024/07/26		97	%	80 - 120
			Total Sulphur (S)	2024/07/26		90	%	80 - 120
			Total Phosphorus (P)	2024/07/26		92	%	80 - 120
			Total Barium (Ba)	2024/07/26		100	%	80 - 120
			Total Silicon (Si)	2024/07/26		92	%	80 - 120
			Total Boron (B)	2024/07/26		90	%	80 - 120
			Total Calcium (Ca)	2024/07/26		95	%	80 - 120
B452399	YL7	SRM	Total Nitrogen (N)	2024/07/25		104	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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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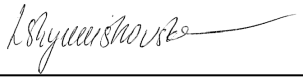
Bureau Veritas Job #: C455339
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

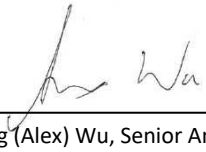
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



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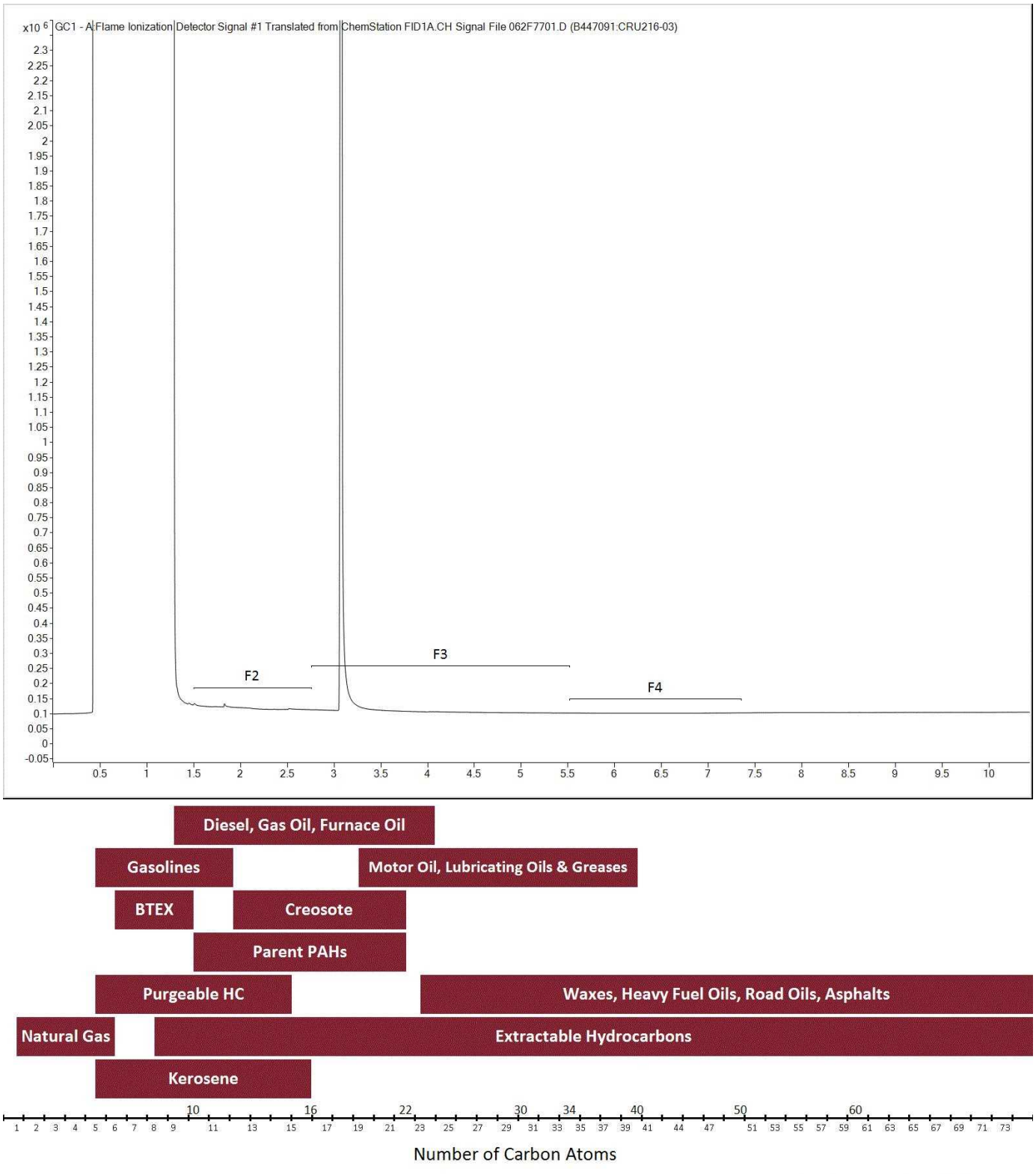
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455339
Report Date: 2024/08/06
Bureau Veritas Sample: CRU216

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-04

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☑ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292210

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: Alex.haigh@worley.com
Ph: 587 897 6249	Ph: 587-897-6249
Sampler Name (Print): STACY GIBB / TINO NKULUBE	Consultant Project #: 417085-54419-24200

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1 AEMP-DS-04		X			18	2024/07/18	13:15	X	
2 ~~AEMP-44~~ 44		~~X~~			18				
3 ~~AEMP-DS-01~~ 44		X			18			X	
4									
5									
6									
7									
8									
9									
10									

ANALYSIS REQUESTED: VOC; PAH; PHCs (FRACTIONS 1-2 PLUS BTEX); PHCs (FRACTIONS 1-4 PLUS BTEX); PHCs (FRACTIONS 2-4); PHCs (FRACTION 1 PLUS BTEX); GRAIN SIZE (75 MICRON); TEXTURE (% SAND, SILT, CLAY); PARTICLE SIZE DISTRIBUTION WITH GRAPH; REGULATED METALS TOT ☒ DIS ☐; MERCURY TOTAL ☒ DISSOLVED ☒; SALINITY SOIL; FERTILIZER SOIL; FERTILIZER WATER; NUTRIENTS SOIL; ROUTINE POTABILITY; pH ☐ EC ☐ ALKALINITY ☐; BASIC CLASS II LANDFILL PKG; True color, TSS, TDS, Turbidity; TOC, DOC, sulphides; Nitrate, Nitrite, Ammonia (total) TKN; Orthophosphate; Sulphide total; COD; Alkalinity, pH, Tint

med2-2024-07-693

IOL SITE LOCATION	Norman Wells, NT
IOL PROJECT # (if applicable)	NA
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM	417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☐ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email: canada.chemistry@worley.com cacal-lordatatrack@worley.com

JARS USED & NOT SUBMITTED (Enter N/A for Water): NA

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

MCAL

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1.	2024/07		1. BRENTON MAH	2024/07/22	13:17
2. Kyle VanThournout	2024/07/22	1800	2. NAUDEEP GILL	2024/07/23	07:50
3.			3.		

LAB USE ONLY
MAXXAM JOB # C455339
SAMPLES
LABELED BY: SMTT
VERIFIED BY: SAS

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200
Your C.O.C. #: 292206

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537498
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455346
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

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Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200
Your C.O.C. #: 292206

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537498
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455346
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200
Your C.O.C. #: 292206

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537498
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455346

Received: 2024/07/22, 13:17

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
06 Aug 2024 10:45:22

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU230			CRU230			CRU231		
Sampling Date		2024/07/20 16:26			2024/07/20 16:26			2024/07/18 10:52		
COC Number		292206			292206			292206		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-01**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B447091				<0.10	0.10	B447091
Volatiles										
Benzene	mg/L	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866
Toluene	mg/L	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866
Ethylbenzene	mg/L	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866
m & p-Xylene	mg/L	<0.00080	0.00080	B450866	<0.00080	0.00080	B450866	<0.00080	0.00080	B450866
o-Xylene	mg/L	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866	<0.00040	0.00040	B450866
Xylenes (Total)	mg/L	<0.00089	0.00089	B448620				<0.00089	0.00089	B448620
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	B448620				<0.10	0.10	B448620
F1 (C6-C10)	mg/L	<0.10	0.10	B450866	<0.10	0.10	B450866	<0.10	0.10	B450866
Extraction Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	97		B447091				96		B447091
Instrument Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	91		B450866	91		B450866	93		B450866
4-Bromofluorobenzene (sur.)	%	111		B450866	113		B450866	107		B450866
D4-1,2-Dichloroethane (sur.)	%	82		B450866	86		B450866	85		B450866

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU231		
Sampling Date		2024/07/18 10:52		
COC Number		292206		
	UNITS	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B447091
Extraction Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	101		B447091

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRU230		CRU231			CRU231		
Sampling Date		2024/07/20 16:26		2024/07/18 10:52			2024/07/18 10:52		
COC Number		292206		292206			292206		
	UNITS	**AEMP-DS-04**	**RDL**	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters									
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	0.20	0.13	0.020	B448825			
Nutrients									
Total Nitrogen (N)	mg/L	<0.20 (1)	0.20	0.23	0.020	B452399	0.22	0.020	B452399

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU230		CRU231		
Sampling Date		2024/07/20 16:26		2024/07/18 10:52		
COC Number		292206		292206		
	UNITS	**AEMP-DS-04**	**QC Batch**	**AEMP-DS-01**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	0.000064	B449080	<0.000020	0.000020	B449080
Total Mercury (Hg)	ug/L	0.0046	B452451	<0.0019	0.0019	B452451
Total Aluminum (Al)	mg/L	1.2	B452741	0.051	0.0030	B453406
Total Antimony (Sb)	mg/L	<0.00060	B452741	<0.00060	0.00060	B453406
Total Arsenic (As)	mg/L	0.0012	B452741	0.00031	0.00020	B453406
Total Barium (Ba)	mg/L	0.071	B452744	0.087	0.010	B453410
Total Beryllium (Be)	mg/L	<0.0010	B452741	<0.0010	0.0010	B453406
Total Boron (B)	mg/L	<0.020	B452744	0.039	0.020	B453410
Total Calcium (Ca)	mg/L	34	B452744	80	0.30	B453410
Total Chromium (Cr)	mg/L	0.0018	B452741	<0.0010	0.0010	B453406
Total Cobalt (Co)	mg/L	0.0011	B452741	<0.00030	0.00030	B453406
Total Copper (Cu)	mg/L	0.0029	B452741	<0.0010	0.0010	B453406
Total Iron (Fe)	mg/L	2.2	B452744	0.11	0.060	B453410
Total Lead (Pb)	mg/L	0.0011	B452741	<0.00020	0.00020	B453406
Total Lithium (Li)	mg/L	<0.020	B452744	<0.020	0.020	B453410
Total Magnesium (Mg)	mg/L	10	B452744	31	0.20	B453410
Total Manganese (Mn)	mg/L	0.036	B452744	0.0074	0.0040	B453410
Total Molybdenum (Mo)	mg/L	0.00099	B452741	0.0021	0.00020	B453406
Total Nickel (Ni)	mg/L	0.0048	B452741	0.0036	0.00050	B453406
Total Phosphorus (P)	mg/L	<0.10	B452744	<0.10	0.10	B453410
Total Potassium (K)	mg/L	1.3	B452744	1.2	0.30	B453410
Total Selenium (Se)	mg/L	0.00035	B452741	<0.00020	0.00020	B453406
Total Silicon (Si)	mg/L	2.9	B452744	2.5	0.50	B453410
Total Silver (Ag)	mg/L	<0.00010	B452741	<0.00010	0.00010	B453406
Total Sodium (Na)	mg/L	7.3	B452744	27	0.50	B453410
Total Strontium (Sr)	mg/L	0.22	B452744	1.6	0.020	B453410
Total Sulphur (S)	mg/L	14	B452744	51	0.20	B453410
Total Thallium (Tl)	mg/L	<0.00020	B452741	<0.00020	0.00020	B453406
Total Tin (Sn)	mg/L	<0.0010	B452741	<0.0010	0.0010	B453406
Total Titanium (Ti)	mg/L	0.011	B452741	0.0022	0.0010	B453406
Total Uranium (U)	mg/L	0.00084	B452741	0.0012	0.00010	B453406
RDL = Reportable Detection Limit						

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU230		CRU231		
Sampling Date		2024/07/20 16:26		2024/07/18 10:52		
COC Number		292206		292206		
	UNITS	**AEMP-DS-04**	**QC Batch**	**AEMP-DS-01**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.0040	B452741	<0.0010	0.0010	B453406
Total Zinc (Zn)	mg/L	0.030	B452741	0.0093	0.0030	B453406
RDL = Reportable Detection Limit						

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU230			CRU230			CRU231		
Sampling Date		2024/07/20 16:26			2024/07/20 16:26			2024/07/18 10:52		
COC Number		292206			292206			292206		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-01**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	130	0.50	B448621				330	0.50	B448621
Ion Balance (% Difference)	%	2.3	N/A	B448624				0.59	N/A	B448624
Nitrate (N)	mg/L	0.083	0.010	B448622				0.099	0.010	B448622
Nitrate (NO3)	mg/L	0.37	0.044	B448626				0.44	0.044	B448626
Nitrite (NO2)	mg/L	<0.033	0.033	B448626				<0.033	0.033	B448626
Sulphide (as H2S)	mg/L	0.016	0.0020	B449088				0.0057	0.0020	B449088
Demand Parameters										
Chemical Oxygen Demand	mg/L	12	10	B450983				<10 (1)	10	B450983
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B448623				<0.000020	0.000020	B448623
Misc. Inorganics										
Conductivity	uS/cm	290	2.0	B452120				750	2.0	B452120
Dissolved Organic Carbon (C)	mg/L	3.5	0.50	B452982				2.5	0.50	B452982
pH	pH	7.90	N/A	B452117				8.34	N/A	B452117
Total Organic Carbon (C)	mg/L	2.8	0.50	B454264	3.1	0.50	B454264	1.7	0.50	B454264
Total Dissolved Solids	mg/L	170	10	B452377				460	10	B452355
Total Suspended Solids	mg/L	53	0.99	B454059				3.1	1.0	B452365
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B452112				1.4	1.0	B452112
Alkalinity (Total as CaCO3)	mg/L	91	1.0	B452112				180	1.0	B452112
Bicarbonate (HCO3)	mg/L	110	1.0	B452112				210	1.0	B452112
Carbonate (CO3)	mg/L	<1.0	1.0	B452112				1.7	1.0	B452112
Hydroxide (OH)	mg/L	<1.0	1.0	B452112				<1.0	1.0	B452112
Total Sulphide	mg/L	0.015	0.0018	B449830				0.0053	0.0018	B449830
Chloride (Cl)	mg/L	8.1	1.0	B450415				33	1.0	B450415
Sulphate (SO4)	mg/L	47	1.0	B450415				170	5.0	B450415

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU230			CRU230			CRU231		
Sampling Date		2024/07/20 16:26			2024/07/20 16:26			2024/07/18 10:52		
COC Number		292206			292206			292206		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-01**	**RDL**	**QC Batch**
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B451335				<0.015	0.015	B452969
Orthophosphate (P)	mg/L	<0.0030	0.0030	B449924				<0.0030	0.0030	B449924
Nitrite (N)	mg/L	<0.010	0.010	B449952				<0.010	0.010	B449952
Nitrate plus Nitrite (N)	mg/L	0.083	0.010	B449952				0.099	0.010	B449952
Misc. Organics										
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B450322				<2.0	2.0	B450322
Physical Properties										
True Colour	PtCo units	6.6	2.0	B450297				5.7	2.0	B450297
Physical Properties										
Turbidity	NTU	72	0.10	B449456				1.6	0.10	B449456

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU230	CRU231			CRU231		
Sampling Date		2024/07/20 16:26	2024/07/18 10:52			2024/07/18 10:52		
COC Number		292206	292206			292206		
	UNITS	**AEMP-DS-04**	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B449091			
Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
Acridine	ug/L	<0.040	<0.040	0.040	B445873	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	<0.010	0.010	B445873	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B445873	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B445873	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	<0.010	0.010	B445873	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
Perylene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	<0.20	0.20	B445873	<0.20	0.20	B445873
Retene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU230	CRU231			CRU231		
Sampling Date		2024/07/20 16:26	2024/07/18 10:52			2024/07/18 10:52		
COC Number		292206	292206			292206		
	UNITS	**AEMP-DS-04**	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
C2-fluorene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
C3-fluorene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873	<0.020	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	112	111		B445873	108		B445873
D8-ACENAPHTHYLENE (sur.)	%	102	103		B445873	98		B445873
D8-NAPHTHALENE (sur.)	%	92	94		B445873	89		B445873

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU230	CRU231			CRU231		
Sampling Date		2024/07/20 16:26	2024/07/18 10:52			2024/07/18 10:52		
COC Number		292206	292206			292206		
	UNITS	**AEMP-DS-04**	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**
TERPHENYL-D14 (sur.)	%	121	116		B445873	113		B445873

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRU230	CRU231		
Sampling Date		2024/07/20 16:26	2024/07/18 10:52		
COC Number		292206	292206		
	UNITS	**AEMP-DS-04**	**AEMP-DS-01**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B451604
RDL = Reportable Detection Limit					

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU230	CRU231		
Sampling Date		2024/07/20 16:26	2024/07/18 10:52		
COC Number		292206	292206		
	UNITS	**AEMP-DS-04**	**AEMP-DS-01**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.038	<0.0030	0.0030	B452541
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B452541
Dissolved Arsenic (As)	mg/L	0.00033	0.00027	0.00020	B452541
Dissolved Barium (Ba)	mg/L	0.047	0.090	0.010	B452036
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Boron (B)	mg/L	<0.020	0.038	0.020	B452036
Dissolved Calcium (Ca)	mg/L	34	82	0.30	B452036
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B452541
Dissolved Copper (Cu)	mg/L	<0.0010	0.0012	0.0010	B452541
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B452036
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B452541
Dissolved Lithium (Li)	mg/L	0.028	0.037	0.020	B452036
Dissolved Magnesium (Mg)	mg/L	10	31	0.20	B452036
Dissolved Manganese (Mn)	mg/L	0.0042	<0.0040	0.0040	B452036
Dissolved Molybdenum (Mo)	mg/L	0.00091	0.0017	0.00020	B452541
Dissolved Nickel (Ni)	mg/L	0.0011	0.00062	0.00050	B452541
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B452036
Dissolved Potassium (K)	mg/L	0.96	1.3	0.30	B452036
Dissolved Selenium (Se)	mg/L	0.00036	<0.00020	0.00020	B452541
Dissolved Silicon (Si)	mg/L	1.5	2.4	0.50	B452036
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B452541
Dissolved Sodium (Na)	mg/L	7.8	28	0.50	B452036
Dissolved Strontium (Sr)	mg/L	0.21	1.6	0.020	B452036
Dissolved Sulphur (S)	mg/L	15	58	0.20	B452036
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B452541
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Uranium (U)	mg/L	0.00078	0.0011	0.00010	B452541
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B452541
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

TEST SUMMARY

Bureau Veritas ID: CRU230
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/07/20
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452982	N/A	2024/07/25	Ming Dong
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B452744	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B452741	2024/07/25	2024/07/26	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B451335	N/A	2024/07/24	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/24	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B449952	N/A	2024/07/23	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/24	2024/07/24	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454059	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU230 Dup
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/07/20
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen

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Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

TEST SUMMARY

Bureau Veritas ID: CRU231
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/07/18
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/27	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452982	N/A	2024/07/25	Ming Dong
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453410	2024/07/25	2024/07/26	Hue Quyen Vuong
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453406	2024/07/25	2024/07/26	Kristijan Kovac
Ion Balance	CALC	B448624	N/A	2024/07/25	Automated Statchk
Ammonia-N (Total)	KONE	B452969	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/24	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B449952	N/A	2024/07/23	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/24	2024/07/24	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452355	2024/07/25	2024/07/26	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B452365	2024/07/25	2024/07/25	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU231 Dup
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/07/18
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell

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Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

TEST SUMMARY

Bureau Veritas ID: CRU231 Dup
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/07/18
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin

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GENERAL COMMENTS

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

Package 1	5.3°C

Sample CRU231 [AEMP-DS-01] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

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Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B449456	DVN	Method Blank	Turbidity	2024/07/23	<0.10		NTU	
B449830	NJD	Method Blank	Total Sulphide	2024/07/23	<0.0018		mg/L	
B449924	YL7	Method Blank	Orthophosphate (P)	2024/07/23	<0.0030		mg/L	
B449952	AFI	Method Blank	Nitrite (N)	2024/07/23	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/23	<0.010		mg/L	
B450297	TOR	Method Blank	True Colour	2024/07/23	<2.0		PtCo units	
B450322	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/25	<2.0		mg/L	
B450415	TOR	Method Blank	Chloride (Cl)	2024/07/23	<1.0		mg/L	
			Sulphate (SO4)	2024/07/23	<1.0		mg/L	
B450866	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		90	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		85	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B450983	AP1	Method Blank	Chemical Oxygen Demand	2024/07/24	<10		mg/L	
B451335	AFI	Method Blank	Total Ammonia (N)	2024/07/24	<0.015		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452036	VSC	Method Blank	Dissolved Iron (Fe)	2024/07/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/07/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/24	<0.30		mg/L	
B452112	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	
B452120	JVM	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452355	TNY	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	
B452365	HE1	Method Blank	Total Suspended Solids	2024/07/25	<1.0		mg/L	
B452377	DVN	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B452399	YL7	Method Blank	Total Nitrogen (N)	2024/07/25	<0.020		mg/L	
B452451	KHU	Method Blank	Total Mercury (Hg)	2024/07/26	<0.0019		ug/L	
B452541	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452741	JAB	Method Blank	Total Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Total Uranium (U)	2024/07/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452744	VSC	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B452969	AFI	Method Blank	Total Ammonia (N)	2024/07/25	<0.015		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B452982	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/07/25	<0.50		mg/L	
B453406	KKC	Method Blank	Total Aluminum (Al)	2024/07/26	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/26	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/26	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/26	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/26	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/26	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/26	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/26	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/26	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/26	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/26	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/26	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/26	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/26	<0.0010		mg/L	
			Total Uranium (U)	2024/07/26	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/26	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/26	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/26	<0.0010		mg/L	
B453410	HQV	Method Blank	Total Iron (Fe)	2024/07/26	<0.060		mg/L	
			Total Lithium (Li)	2024/07/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/26	<0.0040		mg/L	
			Total Potassium (K)	2024/07/26	<0.30		mg/L	
			Total Sodium (Na)	2024/07/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/26	<0.020		mg/L	
			Total Sulphur (S)	2024/07/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/26	<0.10		mg/L	
			Total Barium (Ba)	2024/07/26	<0.010		mg/L	
			Total Silicon (Si)	2024/07/26	<0.50		mg/L	
			Total Boron (B)	2024/07/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/26	<0.30		mg/L	
B454059	HE1	Method Blank	Total Suspended Solids	2024/07/26	<1.0		mg/L	
B454264	JYU	Method Blank	Total Organic Carbon (C)	2024/07/26	<0.50		mg/L	
B450866	RIL	RPD [CRU230-02]	Benzene	2024/07/24	NC		%	30
			Toluene	2024/07/24	NC		%	30
			Ethylbenzene	2024/07/24	NC		%	30
			m & p-Xylene	2024/07/24	NC		%	30
			o-Xylene	2024/07/24	NC		%	30
			F1 (C6-C10)	2024/07/24	NC		%	30
B454264	JYU	RPD [CRU230-03]	Total Organic Carbon (C)	2024/07/26	10		%	20
B445873	DM	RPD [CRU231-12]	Acenaphthene	2024/07/30	NC		%	30
			Acenaphthylene	2024/07/30	NC		%	30
			Acridine	2024/07/30	NC		%	30
			Anthracene	2024/07/30	NC		%	30
			Benzo(a)anthracene	2024/07/30	NC		%	30
			Benzo(b&j)fluoranthene	2024/07/30	NC		%	30
			Benzo(k)fluoranthene	2024/07/30	NC		%	30
			Benzo(g,h,i)perylene	2024/07/30	NC		%	30
			Benzo(c)phenanthrene	2024/07/30	NC		%	30
			Benzo(a)pyrene	2024/07/30	NC		%	30
			Benzo(e)pyrene	2024/07/30	NC		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chrysene	2024/07/30	NC		%	30
			Dibenz(a,h)anthracene	2024/07/30	NC		%	30
			Fluoranthene	2024/07/30	NC		%	30
			Fluorene	2024/07/30	NC		%	30
			Indeno(1,2,3-cd)pyrene	2024/07/30	NC		%	30
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	NC		%	30
			2-Methylnaphthalene	2024/07/30	NC		%	30
			Naphthalene	2024/07/30	NC		%	30
			Phenanthrene	2024/07/30	NC		%	30
			Perylene	2024/07/30	NC		%	30
			Pyrene	2024/07/30	NC		%	30
			Quinoline	2024/07/30	NC		%	30
			Retene	2024/07/30	NC		%	30
			C1-Naphthalene	2024/07/30	NC		%	30
			C3-Naphthalene	2024/07/30	NC		%	30
			C4-Naphthalene	2024/07/30	NC		%	30
			C2-Naphthalene	2024/07/30	NC		%	30
			Biphenyl	2024/07/30	NC		%	30
			C1-biphenyl	2024/07/30	NC		%	30
			C2-biphenyl	2024/07/30	NC		%	30
			C1-fluorene	2024/07/30	NC		%	30
			C2-fluorene	2024/07/30	NC		%	30
			C3-fluorene	2024/07/30	NC		%	30
			Dibenzothiophene	2024/07/30	NC		%	30
			C1-dibenzothiophene	2024/07/30	NC		%	30
			C2-dibenzothiophene	2024/07/30	NC		%	30
			C3-dibenzothiophene	2024/07/30	NC		%	30
			C4-dibenzothiophene	2024/07/30	NC		%	30
			C1 phenanthrene/anthracene	2024/07/30	NC		%	30
			C2 phenanthrene/anthracene	2024/07/30	NC		%	30
			C3 phenanthrene/anthracene	2024/07/30	NC		%	30
			C4 phenanthrene/anthracene	2024/07/30	NC		%	30
			C1 fluoranthene/pyrene	2024/07/30	NC		%	30
			C2 fluoranthene/pyrene	2024/07/30	NC		%	30
			C3 fluoranthene/pyrene	2024/07/30	NC		%	30
			C4 fluoranthene/pyrene	2024/07/30	NC		%	30
			C1 benzo(a)anthracene/chrysene	2024/07/30	NC		%	30
			C2 benzo(a)anthracene/chrysene	2024/07/30	NC		%	30
			C3 benzo(a)anthracene/chrysene	2024/07/30	NC		%	30
			C4 benzo(a)anthracene/chrysene	2024/07/30	NC		%	30
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	NC		%	30
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	NC		%	30
			C1-Acenaphthene	2024/07/30	NC		%	30
			1-Methylnaphthalene	2024/07/30	NC		%	30
B447091	CHA	RPD [CRU231-14]	F2 (C10-C16 Hydrocarbons)	2024/07/26	NC		%	30
B452399	YL7	RPD [CRU231-03]	Total Nitrogen (N)	2024/07/25	3.9		%	20
B450866	RIL	Matrix Spike [CRU231-02]	1,4-Difluorobenzene (sur.)	2024/07/24		89	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		88	%	50 - 140
			Benzene	2024/07/24		87	%	50 - 140
			Toluene	2024/07/24		90	%	50 - 140
			Ethylbenzene	2024/07/24		91	%	50 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			m & p-Xylene	2024/07/24		84	%	50 - 140
			o-Xylene	2024/07/24		86	%	50 - 140
			F1 (C6-C10)	2024/07/24		106	%	60 - 140
B452399	YL7	Matrix Spike [CRU231-03]	Total Nitrogen (N)	2024/07/25		108	%	80 - 120
B454264	JYU	Matrix Spike [CRU230-03]	Total Organic Carbon (C)	2024/07/26		108	%	80 - 120
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130
			Pyrene	2024/07/30		90	%	50 - 130
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B449456	DVN	LCS	Turbidity	2024/07/23		99	%	80 - 120
B449830	NJD	LCS	Total Sulphide	2024/07/23		100	%	80 - 120
B449924	YL7	LCS	Orthophosphate (P)	2024/07/23		101	%	80 - 120
B449952	AFI	LCS	Nitrite (N)	2024/07/23		100	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/23		106	%	80 - 120
B450297	TOR	LCS	True Colour	2024/07/23		107	%	80 - 120
B450322	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/25		89	%	70 - 130
B450415	TOR	LCS	Chloride (Cl)	2024/07/23		105	%	80 - 120
			Sulphate (SO4)	2024/07/23		105	%	80 - 120
B450866	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		87	%	50 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			4-Bromofluorobenzene (sur.)	2024/07/24		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		88	%	50 - 140
			Benzene	2024/07/24		84	%	60 - 130
			Toluene	2024/07/24		88	%	60 - 130
			Ethylbenzene	2024/07/24		91	%	60 - 130
			m & p-Xylene	2024/07/24		83	%	60 - 130
			o-Xylene	2024/07/24		86	%	60 - 130
			F1 (C6-C10)	2024/07/24		105	%	60 - 140
B450983	AP1	LCS	Chemical Oxygen Demand	2024/07/24		101	%	80 - 120
B451335	AFI	LCS	Total Ammonia (N)	2024/07/24		103	%	80 - 120
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B452036	VSC	LCS	Dissolved Iron (Fe)	2024/07/24		93	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		93	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		91	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		97	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		88	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		93	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/24		95	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		90	%	80 - 120
			Dissolved Silicon (Si)	2024/07/24		88	%	80 - 120
			Dissolved Boron (B)	2024/07/24		91	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/24		93	%	80 - 120
B452112	JVM	LCS	Alkalinity (Total as CaCO3)	2024/07/25		100	%	80 - 120
B452117	JVM	LCS	pH	2024/07/25		100	%	97 - 103
B452120	JVM	LCS	Conductivity	2024/07/25		101	%	90 - 110
B452355	TNY	LCS	Total Dissolved Solids	2024/07/26		98	%	80 - 120
B452365	HE1	LCS	Total Suspended Solids	2024/07/25		98	%	80 - 120
B452377	DVN	LCS	Total Dissolved Solids	2024/07/26		98	%	80 - 120
B452399	YL7	LCS	Total Nitrogen (N)	2024/07/25		105	%	80 - 120
B452451	KHU	LCS	Total Mercury (Hg)	2024/07/26		107	%	80 - 120
B452541	JAB	LCS	Dissolved Aluminum (Al)	2024/07/25		103	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/25		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		104	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		103	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		104	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		98	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		100	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		106	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B452741	JAB	LCS	Total Aluminum (Al)	2024/07/25		95	%	80 - 120
			Total Chromium (Cr)	2024/07/25		102	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Cobalt (Co)	2024/07/25		103	%	80 - 120
			Total Copper (Cu)	2024/07/25		102	%	80 - 120
			Total Lead (Pb)	2024/07/25		102	%	80 - 120
			Total Antimony (Sb)	2024/07/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/07/25		103	%	80 - 120
			Total Nickel (Ni)	2024/07/25		102	%	80 - 120
			Total Selenium (Se)	2024/07/25		105	%	80 - 120
			Total Silver (Ag)	2024/07/25		104	%	80 - 120
			Total Arsenic (As)	2024/07/25		105	%	80 - 120
			Total Thallium (Tl)	2024/07/25		106	%	80 - 120
			Total Tin (Sn)	2024/07/25		105	%	80 - 120
			Total Titanium (Ti)	2024/07/25		104	%	80 - 120
			Total Uranium (U)	2024/07/25		106	%	80 - 120
			Total Vanadium (V)	2024/07/25		103	%	80 - 120
			Total Zinc (Zn)	2024/07/25		106	%	80 - 120
			Total Beryllium (Be)	2024/07/25		100	%	80 - 120
B452744	VSC	LCS	Total Iron (Fe)	2024/07/25		95	%	80 - 120
			Total Lithium (Li)	2024/07/25		94	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		99	%	80 - 120
			Total Manganese (Mn)	2024/07/25		91	%	80 - 120
			Total Potassium (K)	2024/07/25		95	%	80 - 120
			Total Sodium (Na)	2024/07/25		91	%	80 - 120
			Total Strontium (Sr)	2024/07/25		98	%	80 - 120
			Total Sulphur (S)	2024/07/25		90	%	80 - 120
			Total Phosphorus (P)	2024/07/25		92	%	80 - 120
			Total Barium (Ba)	2024/07/25		99	%	80 - 120
			Total Silicon (Si)	2024/07/25		88	%	80 - 120
			Total Boron (B)	2024/07/25		92	%	80 - 120
			Total Calcium (Ca)	2024/07/25		94	%	80 - 120
B452969	AFI	LCS	Total Ammonia (N)	2024/07/25		102	%	80 - 120
B452982	MDO	LCS	Dissolved Organic Carbon (C)	2024/07/25		104	%	80 - 120
B453406	KKC	LCS	Total Aluminum (Al)	2024/07/26		97	%	80 - 120
			Total Chromium (Cr)	2024/07/26		97	%	80 - 120
			Total Cobalt (Co)	2024/07/26		97	%	80 - 120
			Total Copper (Cu)	2024/07/26		97	%	80 - 120
			Total Lead (Pb)	2024/07/26		99	%	80 - 120
			Total Antimony (Sb)	2024/07/26		104	%	80 - 120
			Total Molybdenum (Mo)	2024/07/26		98	%	80 - 120
			Total Nickel (Ni)	2024/07/26		97	%	80 - 120
			Total Selenium (Se)	2024/07/26		104	%	80 - 120
			Total Silver (Ag)	2024/07/26		95	%	80 - 120
			Total Arsenic (As)	2024/07/26		102	%	80 - 120
			Total Thallium (Tl)	2024/07/26		100	%	80 - 120
			Total Tin (Sn)	2024/07/26		96	%	80 - 120
			Total Titanium (Ti)	2024/07/26		96	%	80 - 120
			Total Uranium (U)	2024/07/26		100	%	80 - 120
			Total Vanadium (V)	2024/07/26		99	%	80 - 120
			Total Zinc (Zn)	2024/07/26		99	%	80 - 120
			Total Beryllium (Be)	2024/07/26		97	%	80 - 120
B453410	HQV	LCS	Total Iron (Fe)	2024/07/26		94	%	80 - 120
			Total Lithium (Li)	2024/07/26		94	%	80 - 120
			Total Magnesium (Mg)	2024/07/26		97	%	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
			Total Manganese (Mn)	2024/07/26		93	%	80 - 120
			Total Potassium (K)	2024/07/26		96	%	80 - 120
			Total Sodium (Na)	2024/07/26		94	%	80 - 120
			Total Strontium (Sr)	2024/07/26		97	%	80 - 120
			Total Sulphur (S)	2024/07/26		90	%	80 - 120
			Total Phosphorus (P)	2024/07/26		92	%	80 - 120
			Total Barium (Ba)	2024/07/26		100	%	80 - 120
			Total Silicon (Si)	2024/07/26		92	%	80 - 120
			Total Boron (B)	2024/07/26		90	%	80 - 120
			Total Calcium (Ca)	2024/07/26		95	%	80 - 120
B454059	HE1	LCS	Total Suspended Solids	2024/07/26		96	%	80 - 120
B454264	JYU	LCS	Total Organic Carbon (C)	2024/07/26		100	%	80 - 120
B452399	YL7	SRM	Total Nitrogen (N)	2024/07/25		104	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

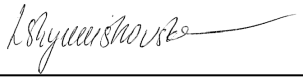
Bureau Veritas Job #: C455346
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMAN WELL, NT
Project #: 417085-54415-24200

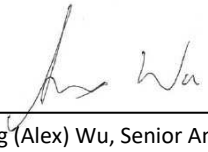
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



Qiliang (Alex) Wu, Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

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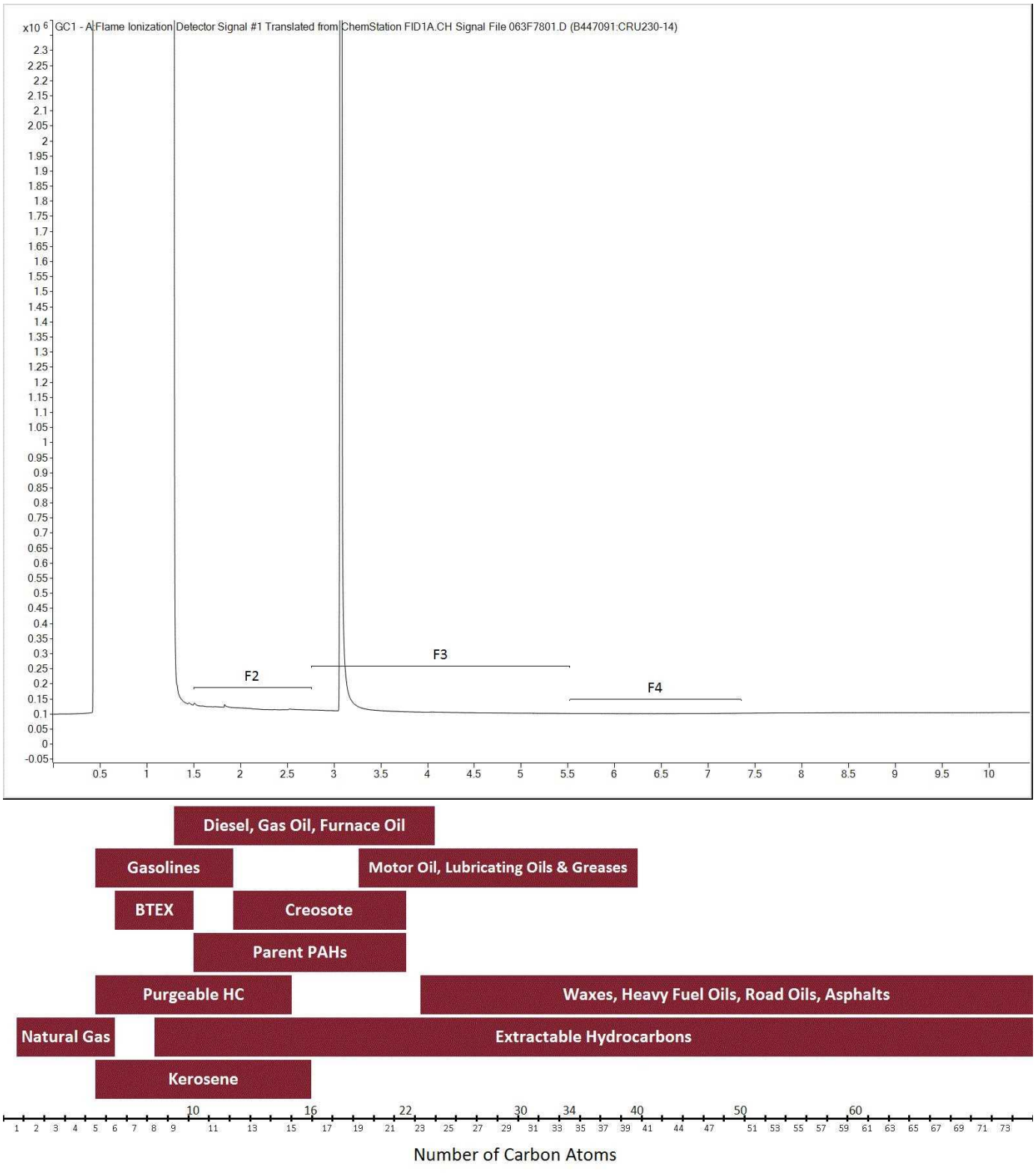
Bureau Veritas Job #: C455346
Report Date: 2024/08/06
Bureau Veritas Sample: CRU230

Advisian
Task Order#:417085-54419Line Item:
Site#:
Site Location: NORMAN WELL, NT
Client ID: AEMP-DS-04

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



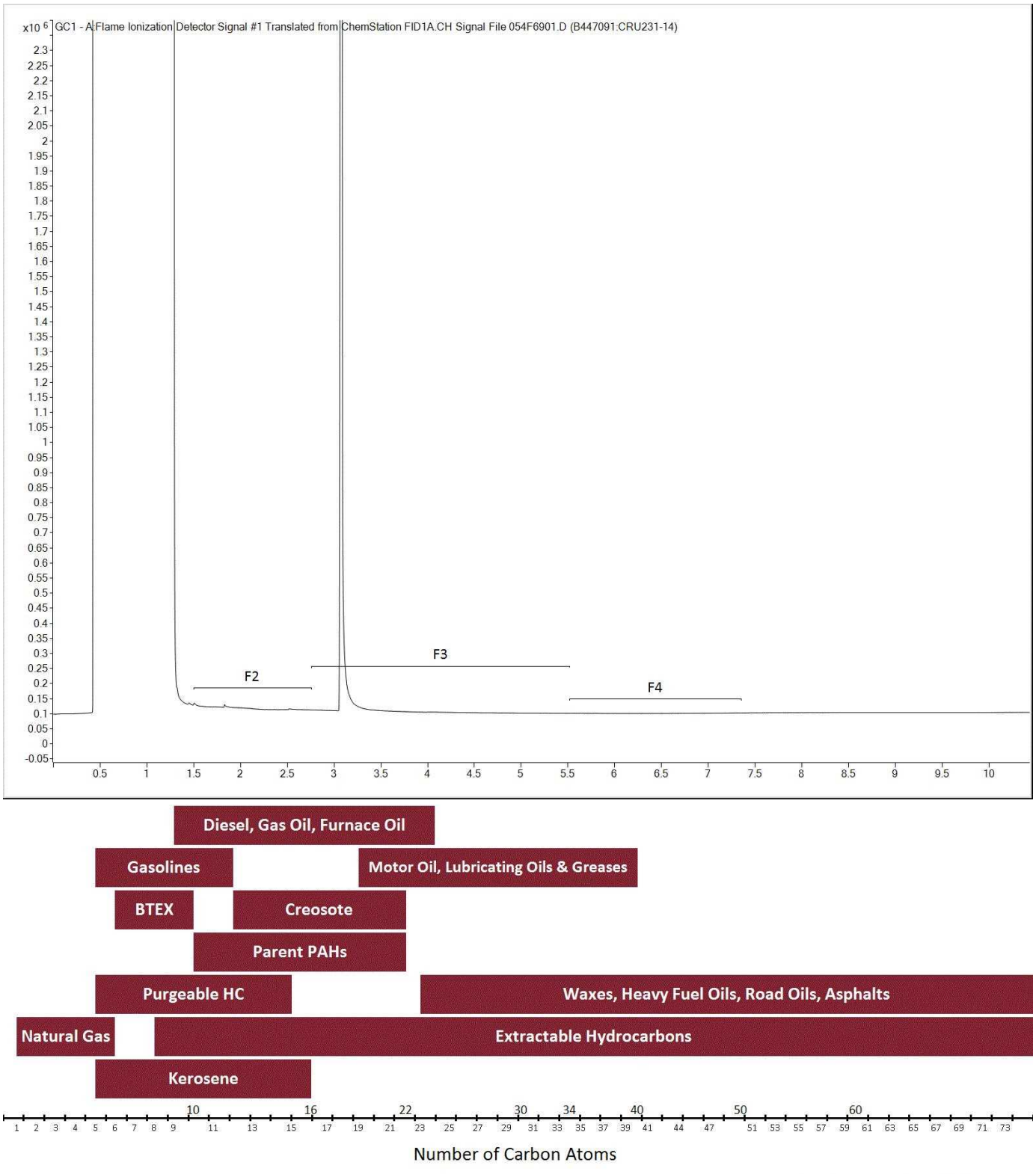
hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Bureau Veritas Job #: C455346
Report Date: 2024/08/06
Bureau Veritas Sample: CRU231

Advisian
Task Order#:417085-54419Line Item:
Site#:
Site Location: NORMAN WELL, NT
Client ID: AEMP-DS-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

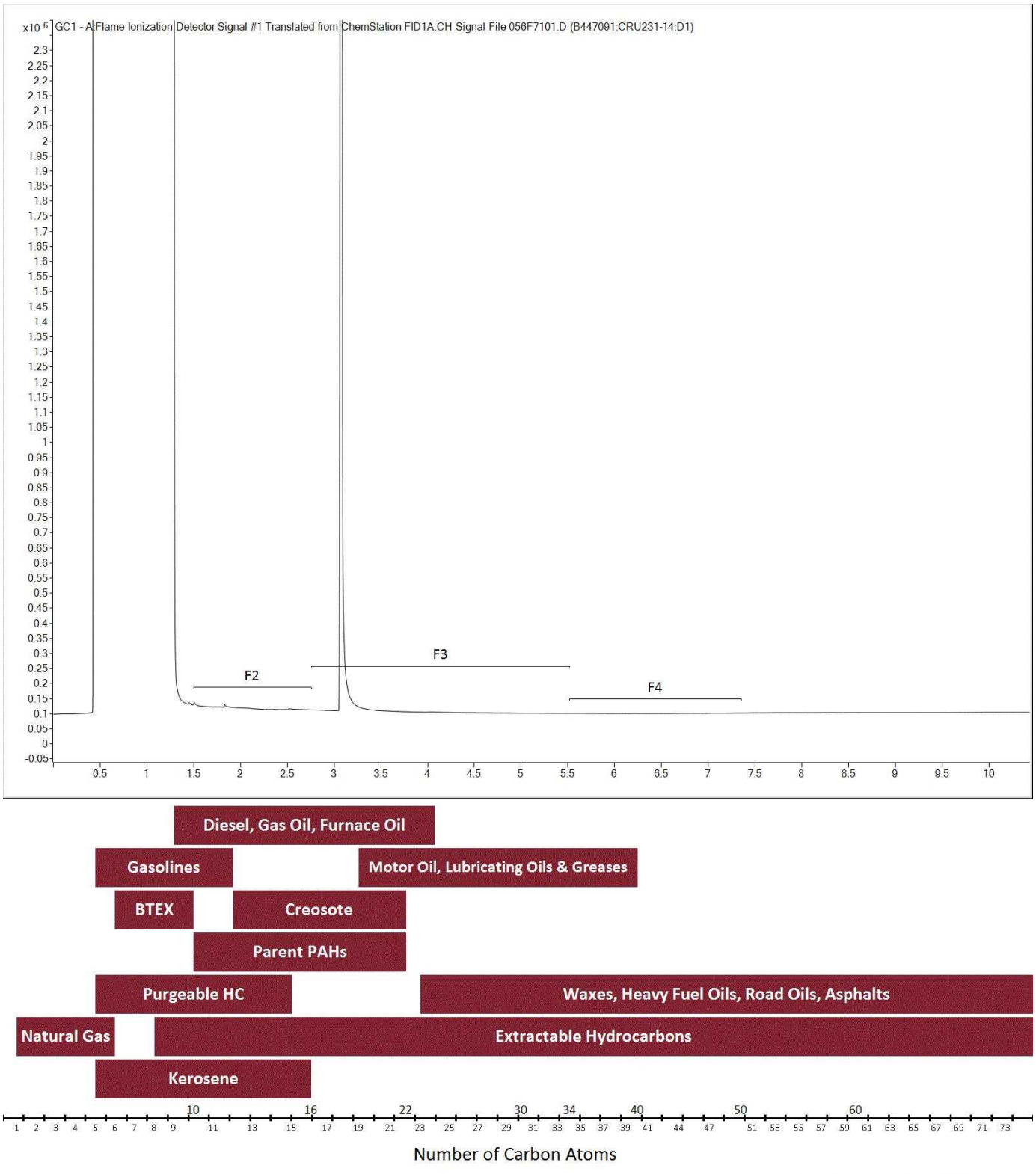


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C455346
Report Date: 2024/08/06
Bureau Veritas Sample: CRU231 Lab-Dup

Advisian
Task Order#:417085-54419Line Item:
Site#:
Site Location: NORMAN WELL, NT
Client ID: AEMP-DS-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

C455346
2024/07/22 13:17

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292206

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: WORLEY
Contact Name: ALEX HAIGH	Contact Name: ALEX HAIGH
Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7	Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587-897-6249	Ph: 587 897 6249
Sampler Name (Print): ~~Tara~~ ~~Stacy~~ TINO NGOLUBE	Consultant Project #: 417085-54419.24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	Oil + Grease	TOC, DOC	Nitrate, Nitrite, Ammonia (total)	ORTHOPHOSPHATE	SULPHUR - TOTAL + DISSOLVED	COD	ALKALINITY, PAH, TPH
1	AEMP-DS-04		X			18	2024/07/20	16:46	X			X	X							X	X					X			X		X	X	X	X	X
2	AEMP-DS-01		X			18	2024/07/18	10:52	X			XX	X							X	X					X			X		XX	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

med2-2024-07-694

IOL SITE LOCATION: NORMAN WELL, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419.24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email Canada.chemistry@worley.com cacal-IOR datatrack@worley.com Stacy.gibb@worley.com
IES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓			5	6	5

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB #

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	STACY GIBBS	2024/07/21	10:30	1.	BRENTON MAH	2024/07/22	13:17
2.				2.			
3.				3.			

SAMPLES
LABELED BY:
VERIFIED BY:

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292206

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: WORLEY
Contact Name: ALEX HAIGH	Contact Name: ALEX HAIGH
Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7	Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587-897-6249	Ph: 587 897 6249
Sampler Name (Print): ~~Ross~~ ~~Stanley~~ TINO NADJUBE	Consultant Project #: 417085-54419.24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	ANALYSIS REQUESTED: VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	true Color, TSS, TDS, Turbidity	Oil + Grease	TOC, DOC	Nitrate, Nitrite, Ammonia (Total, as N)	ORTHOPHOSPHATE	SULPHIDE - TOTAL + DISSOLVED	COD	ALKYLATED PAH, TPH
1	AEMP-DS-04		X			18	2024/07/20	16:26	X			X	X							X	X					X			X	X	X	X	X	X
2	AEMP-DS-01		X			18	2024/07/18	10:52	X			X	X							X	X					X			X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

med2-2024-07-694

IOL SITE LOCATION: NORMAN WELL, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419.24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com cacal-IOR datatrack@worley.com stacy.gibb@worley.com
IES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓			5	6	5
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

MCAL

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓			2	1	2
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C455346

SAMPLES
LABELED BY: SMT
VERIFIED BY: GS

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	STACY GIBB	2024/07/21	10:30	1.	BRENTON MAH	2024/07/22	13:17
2.	Kyle VanThournout	2024/07/22	1800	2.	NAVDEEP GILL	2024/07/23	07:00
3.				3.			

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292209

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/07/31
Report #: R3535869
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455350
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292209

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/07/31
Report #: R3535869
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455350
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292209

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/07/31
Report #: R3535869
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455350

Received: 2024/07/22, 13:17

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
31 Jul 2024 17:27:57

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU256	CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05		
COC Number		292209	292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B447091
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B450866
Toluene	mg/L	<0.00040	<0.00040	0.00040	B450866
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B450866
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B450866
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B450866
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B448620
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B448620
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B450866
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	103	108		B447091
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	92	92		B450866
4-Bromofluorobenzene (sur.)	%	110	109		B450866
D4-1,2-Dichloroethane (sur.)	%	85	84		B450866
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRU256	CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05		
COC Number		292209	292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	<0.20	0.20	B448825
Nutrients					
Total Nitrogen (N)	mg/L	0.22 (1)	<0.20 (2)	0.20	B452399

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU256	CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05		
COC Number		292209	292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	0.000093	0.00010	0.000020	B449080
Total Mercury (Hg)	ug/L	0.0068 (1)	0.0057 (1)	0.0038	B452451
Total Aluminum (Al)	mg/L	1.8	1.8	0.0030	B453304
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B453304
Total Arsenic (As)	mg/L	0.0020	0.0018	0.00020	B453304
Total Barium (Ba)	mg/L	0.086	0.086	0.010	B453310
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B453304
Total Boron (B)	mg/L	0.022	0.022	0.020	B453310
Total Calcium (Ca)	mg/L	39	39	0.30	B453310
Total Chromium (Cr)	mg/L	0.0030	0.0029	0.0010	B453304
Total Cobalt (Co)	mg/L	0.0018	0.0017	0.00030	B453304
Total Copper (Cu)	mg/L	0.0043	0.0043	0.0010	B453304
Total Iron (Fe)	mg/L	3.3	3.4	0.060	B453310
Total Lead (Pb)	mg/L	0.0020	0.0018	0.00020	B453304
Total Lithium (Li)	mg/L	<0.026	<0.026	0.026	B453310
Total Magnesium (Mg)	mg/L	12	12	0.20	B453310
Total Manganese (Mn)	mg/L	0.055	0.054	0.0040	B453310
Total Molybdenum (Mo)	mg/L	0.0010	0.0012	0.00020	B453304
Total Nickel (Ni)	mg/L	0.0071	0.0076	0.00050	B453304
Total Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B453310
Total Potassium (K)	mg/L	1.5	1.6	0.30	B453310
Total Selenium (Se)	mg/L	0.00037	0.00035	0.00020	B453304
Total Silicon (Si)	mg/L	3.3	3.4	0.50	B453310
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B453304
Total Sodium (Na)	mg/L	8.8	8.9	0.50	B453310
Total Strontium (Sr)	mg/L	0.32	0.33	0.020	B453310
Total Sulphur (S)	mg/L	16	17	0.20	B453310
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B453304
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B453304

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU256	CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05		
COC Number		292209	292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**
Total Titanium (Ti)	mg/L	0.018	0.018	0.0010	B453304
Total Uranium (U)	mg/L	0.00091	0.00093	0.00010	B453304
Total Vanadium (V)	mg/L	0.0057	0.0058	0.0010	B453304
Total Zinc (Zn)	mg/L	0.035	0.040	0.0030	B453304
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU256		CRU257			CRU257		
Sampling Date		2024/07/20 17:05		2024/07/20 17:05			2024/07/20 17:05		
COC Number		292209		292209			292209		
	UNITS	**AEMP-DS-02**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters									
Hardness (CaCO3)	mg/L	130	B448621	130	0.50	B448621			
Ion Balance (% Difference)	%	5.6	B448624	6.6	N/A	B448624			
Nitrate (N)	mg/L	0.089	B448622	0.083	0.010	B448622			
Nitrate (NO3)	mg/L	0.40	B448626	0.37	0.044	B448626			
Nitrite (NO2)	mg/L	<0.033	B448626	<0.033	0.033	B448626			
Sulphide (as H2S)	mg/L	0.021	B449088	0.020	0.0020	B449088			
Demand Parameters									
Chemical Oxygen Demand	mg/L	12	B452549	28	10	B452549			
Elements									
Dissolved Cadmium (Cd)	mg/L	<0.000020	B448623	<0.000020	0.000020	B448623			
Misc. Inorganics									
Conductivity	uS/cm	330	B452120	320	2.0	B452142	320	2.0	B452142
Dissolved Organic Carbon (C)	mg/L	3.2	B460547	3.3	0.50	B460547			
pH	pH	7.95	B452117	7.34	N/A	B452141	7.55	N/A	B452141
Total Organic Carbon (C)	mg/L	3.0	B460844	2.9	0.50	B460844			
Total Dissolved Solids	mg/L	180	B452377	190	10	B452377			
Total Suspended Solids	mg/L	110	B454058	100	1.0	B454058			
Anions									
Alkalinity (PP as CaCO3)	mg/L	<1.0	B452112	<1.0	1.0	B452134	<1.0	1.0	B452134
Alkalinity (Total as CaCO3)	mg/L	96	B452112	100	1.0	B452134	100	1.0	B452134
Bicarbonate (HCO3)	mg/L	120	B452112	130	1.0	B452134	120	1.0	B452134
Carbonate (CO3)	mg/L	<1.0	B452112	<1.0	1.0	B452134	<1.0	1.0	B452134
Hydroxide (OH)	mg/L	<1.0	B452112	<1.0	1.0	B452134	<1.0	1.0	B452134
Total Sulphide	mg/L	0.020	B449830	0.018	0.0018	B449830			
Chloride (Cl)	mg/L	10	B450415	9.8	1.0	B450415			
Sulphate (SO4)	mg/L	57	B450415	56	1.0	B450415			
Nutrients									
Total Ammonia (N)	mg/L	<0.015	B452700	<0.015	0.015	B452700			
Orthophosphate (P)	mg/L	<0.0030	B449924	<0.0030	0.0030	B449924			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU256		CRU257			CRU257		
Sampling Date		2024/07/20 17:05		2024/07/20 17:05			2024/07/20 17:05		
COC Number		292209		292209			292209		
	UNITS	**AEMP-DS-02**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	B449958	<0.010	0.010	B449958			
Nitrate plus Nitrite (N)	mg/L	0.089	B449958	0.083	0.010	B449958			
Misc. Organics									
Total Petroleum Hydrocarbon	mg/L	<2.0	B450322	<2.0	2.0	B450322			
Physical Properties									
True Colour	PtCo units	5.8	B450297	5.4	2.0	B450297			
Physical Properties									
Turbidity	NTU	120	B449456	110	0.10	B449456			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU256	CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05		
COC Number		292209	292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B449091
Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B445873
Acridine	ug/L	<0.040	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Perylene	ug/L	<0.050	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	<0.20	0.20	B445873
Retene	ug/L	<0.050	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C3-Naphthalene	ug/L	0.14	<0.10	0.10	B445873
C4-Naphthalene	ug/L	0.10	<0.10	0.10	B445873
C2-Naphthalene	ug/L	0.11	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU256	CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05		
COC Number		292209	292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	0.025	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C2-fluorene	ug/L	0.064	<0.050	0.050	B445873
C3-fluorene	ug/L	0.077	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	0.067	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	0.065	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	0.10	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	0.075	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	89	108		B445873
D8-ACENAPHTHYLENE (sur.)	%	81	98		B445873
D8-NAPHTHALENE (sur.)	%	77	87		B445873
TERPHENYL-D14 (sur.)	%	95	116		B445873
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRU256	CRU257	CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05	2024/07/20 17:05		
COC Number		292209	292209	292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
Elements						
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	B451604

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU256	CRU257			CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05			2024/07/20 17:05		
COC Number		292209	292209			292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
Elements								
Dissolved Aluminum (Al)	mg/L	0.041	0.040	0.0030	B452541			
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B452541			
Dissolved Arsenic (As)	mg/L	0.00031	0.00034	0.00020	B452541			
Dissolved Barium (Ba)	mg/L	0.046	0.048	0.010	B452036	0.047	0.010	B452036
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B452541			
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B452036	<0.020	0.020	B452036
Dissolved Calcium (Ca)	mg/L	36	36	0.30	B452036	36	0.30	B452036
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B452541			
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B452541			
Dissolved Copper (Cu)	mg/L	0.0011	<0.0010	0.0010	B452541			
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B452036	<0.060	0.060	B452036
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B452541			
Dissolved Lithium (Li)	mg/L	0.029	0.031	0.020	B452036	0.029	0.020	B452036
Dissolved Magnesium (Mg)	mg/L	11	11	0.20	B452036	11	0.20	B452036
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B452036	<0.0040	0.0040	B452036
Dissolved Molybdenum (Mo)	mg/L	0.00080	0.00090	0.00020	B452541			
Dissolved Nickel (Ni)	mg/L	0.00082	0.00095	0.00050	B452541			
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B452036	<0.10	0.10	B452036
Dissolved Potassium (K)	mg/L	0.89	0.96	0.30	B452036	0.95	0.30	B452036
Dissolved Selenium (Se)	mg/L	0.00030	0.00034	0.00020	B452541			
Dissolved Silicon (Si)	mg/L	1.5	1.5	0.50	B452036	1.5	0.50	B452036
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B452541			
Dissolved Sodium (Na)	mg/L	8.5	8.6	0.50	B452036	8.5	0.50	B452036
Dissolved Strontium (Sr)	mg/L	0.26	0.26	0.020	B452036	0.26	0.020	B452036
Dissolved Sulphur (S)	mg/L	17	17	0.20	B452036	17	0.20	B452036
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B452541			
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B452541			
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B452541			
Dissolved Uranium (U)	mg/L	0.00075	0.00074	0.00010	B452541			
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B452541			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU256	CRU257			CRU257		
Sampling Date		2024/07/20 17:05	2024/07/20 17:05			2024/07/20 17:05		
COC Number		292209	292209			292209		
	UNITS	**AEMP-DS-02**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B452541			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU256
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/07/20
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B452549	N/A	2024/07/25	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B460547	N/A	2024/07/31	Jill Yuen
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453310	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453304	2024/07/25	2024/07/25	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B452700	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/24	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B449958	N/A	2024/07/23	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/24	2024/07/24	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/30	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B460844	N/A	2024/07/31	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU257
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/07/20
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452134	N/A	2024/07/25	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly

Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU257
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/07/20
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B452549	N/A	2024/07/25	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B460547	N/A	2024/07/31	Jill Yuen
Conductivity @25C	COND	B452142	N/A	2024/07/25	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453310	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453304	2024/07/25	2024/07/25	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B452700	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/24	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B449958	N/A	2024/07/23	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/24	2024/07/24	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/31	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452141	N/A	2024/07/25	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B460844	N/A	2024/07/31	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU257 Dup
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/07/20
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452134	N/A	2024/07/25	Ayesha Ayesha
Conductivity @25C	COND	B452142	N/A	2024/07/25	Ayesha Ayesha
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria

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Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU257 Dup
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/07/20
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
pH @25°C	AT/ALK	B452141	N/A	2024/07/25	Ayesha Ayesha

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GENERAL COMMENTS

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

Package 1	3.3°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B449456	DVN	Method Blank	Turbidity	2024/07/23	<0.10		NTU	
B449830	NJD	Method Blank	Total Sulphide	2024/07/23	<0.0018		mg/L	
B449924	YL7	Method Blank	Orthophosphate (P)	2024/07/23	<0.0030		mg/L	
B449958	AFI	Method Blank	Nitrite (N)	2024/07/23	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/23	<0.010		mg/L	
B450297	TOR	Method Blank	True Colour	2024/07/23	<2.0		PtCo units	
B450322	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/25	<2.0		mg/L	
B450415	TOR	Method Blank	Chloride (Cl)	2024/07/23	<1.0		mg/L	
			Sulphate (SO4)	2024/07/23	<1.0		mg/L	
B450866	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		90	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		85	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452036	VSC	Method Blank	Dissolved Iron (Fe)	2024/07/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/07/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/24	<0.30		mg/L	
B452112	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	
B452120	JVM	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452134	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B452142	AYE	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452377	DVN	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	
B452399	YL7	Method Blank	Total Nitrogen (N)	2024/07/25	<0.020		mg/L	
B452451	KHU	Method Blank	Total Mercury (Hg)	2024/07/26	<0.0019		ug/L	
B452541	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452549	AP1	Method Blank	Chemical Oxygen Demand	2024/07/25	<10		mg/L	
B452700	AFI	Method Blank	Total Ammonia (N)	2024/07/25	<0.015		mg/L	
B453304	JAB	Method Blank	Total Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Total Uranium (U)	2024/07/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B453310	VSC	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.026		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B454058	HE1	Method Blank	Total Suspended Solids	2024/07/26	<1.0		mg/L	
B460547	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/07/31	<0.50		mg/L	
B460844	JYU	Method Blank	Total Organic Carbon (C)	2024/07/31	<0.50		mg/L	
B451604	KHU	RPD [CRU257-10]	Dissolved Mercury (Hg)	2024/07/24	NC		%	20
B452036	VSC	RPD [CRU257-07]	Dissolved Iron (Fe)	2024/07/24	NC		%	20
			Dissolved Lithium (Li)	2024/07/24	7.4		%	20
			Dissolved Magnesium (Mg)	2024/07/24	0.91		%	20
			Dissolved Manganese (Mn)	2024/07/24	NC		%	20
			Dissolved Potassium (K)	2024/07/24	1.6		%	20
			Dissolved Sodium (Na)	2024/07/24	0.17		%	20
			Dissolved Strontium (Sr)	2024/07/24	1.2		%	20
			Dissolved Sulphur (S)	2024/07/24	0.051		%	20
			Dissolved Phosphorus (P)	2024/07/24	NC		%	20
			Dissolved Barium (Ba)	2024/07/24	2.9		%	20
			Dissolved Silicon (Si)	2024/07/24	2.3		%	20
			Dissolved Boron (B)	2024/07/24	NC		%	20
			Dissolved Calcium (Ca)	2024/07/24	0.21		%	20
B452134	AYE	RPD [CRU257-01]	Alkalinity (Total as CaCO3)	2024/07/25	1.6		%	20
			Alkalinity (PP as CaCO3)	2024/07/25	NC		%	20
			Bicarbonate (HCO3)	2024/07/25	1.6		%	20
			Carbonate (CO3)	2024/07/25	NC		%	20
			Hydroxide (OH)	2024/07/25	NC		%	20
B452141	AYE	RPD [CRU257-01]	pH	2024/07/25	2.9		%	N/A
B452142	AYE	RPD [CRU257-01]	Conductivity	2024/07/25	0.32		%	10
B452036	VSC	Matrix Spike [CRU257-07]	Dissolved Iron (Fe)	2024/07/24		97	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		94	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		97	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		96	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		98	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		90	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		98	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/24		101	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		95	%	80 - 120
			Dissolved Silicon (Si)	2024/07/24		90	%	80 - 120
			Dissolved Boron (B)	2024/07/24		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/24		95	%	80 - 120
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130
			Pyrene	2024/07/30		90	%	50 - 130
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B449456	DVN	LCS	Turbidity	2024/07/23		99	%	80 - 120
B449830	NJD	LCS	Total Sulphide	2024/07/23		100	%	80 - 120
B449924	YL7	LCS	Orthophosphate (P)	2024/07/23		101	%	80 - 120
B449958	AFI	LCS	Nitrite (N)	2024/07/23		102	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/23		106	%	80 - 120
B450297	TOR	LCS	True Colour	2024/07/23		107	%	80 - 120
B450322	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/25		89	%	70 - 130
B450415	TOR	LCS	Chloride (Cl)	2024/07/23		105	%	80 - 120
			Sulphate (SO4)	2024/07/23		105	%	80 - 120
B450866	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		87	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		88	%	50 - 140
			Benzene	2024/07/24		84	%	60 - 130
			Toluene	2024/07/24		88	%	60 - 130
			Ethylbenzene	2024/07/24		91	%	60 - 130
			m & p-Xylene	2024/07/24		83	%	60 - 130
			o-Xylene	2024/07/24		86	%	60 - 130
			F1 (C6-C10)	2024/07/24		105	%	60 - 140
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B452036	VSC	LCS	Dissolved Iron (Fe)	2024/07/24		93	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		93	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		91	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		97	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		88	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		93	%	80 - 120

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Phosphorus (P)	2024/07/24		95	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		90	%	80 - 120
			Dissolved Silicon (Si)	2024/07/24		88	%	80 - 120
			Dissolved Boron (B)	2024/07/24		91	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/24		93	%	80 - 120
B452112	JVM	LCS	Alkalinity (Total as CaCO3)	2024/07/25		100	%	80 - 120
B452117	JVM	LCS	pH	2024/07/25		100	%	97 - 103
B452120	JVM	LCS	Conductivity	2024/07/25		101	%	90 - 110
B452134	AYE	LCS	Alkalinity (Total as CaCO3)	2024/07/25		99	%	80 - 120
B452141	AYE	LCS	pH	2024/07/25		100	%	97 - 103
B452142	AYE	LCS	Conductivity	2024/07/25		99	%	90 - 110
B452377	DVN	LCS	Total Dissolved Solids	2024/07/26		98	%	80 - 120
B452399	YL7	LCS	Total Nitrogen (N)	2024/07/25		105	%	80 - 120
B452451	KHU	LCS	Total Mercury (Hg)	2024/07/26		107	%	80 - 120
B452541	JAB	LCS	Dissolved Aluminum (Al)	2024/07/25		103	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/25		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		104	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		103	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		104	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		98	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		100	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		106	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B452549	AP1	LCS	Chemical Oxygen Demand	2024/07/25		101	%	80 - 120
B452700	AFI	LCS	Total Ammonia (N)	2024/07/25		101	%	80 - 120
B453304	JAB	LCS	Total Aluminum (Al)	2024/07/25		109	%	80 - 120
			Total Chromium (Cr)	2024/07/25		107	%	80 - 120
			Total Cobalt (Co)	2024/07/25		109	%	80 - 120
			Total Copper (Cu)	2024/07/25		107	%	80 - 120
			Total Lead (Pb)	2024/07/25		105	%	80 - 120
			Total Antimony (Sb)	2024/07/25		109	%	80 - 120
			Total Molybdenum (Mo)	2024/07/25		109	%	80 - 120
			Total Nickel (Ni)	2024/07/25		108	%	80 - 120
			Total Selenium (Se)	2024/07/25		104	%	80 - 120
			Total Silver (Ag)	2024/07/25		109	%	80 - 120
			Total Arsenic (As)	2024/07/25		107	%	80 - 120
			Total Thallium (Tl)	2024/07/25		108	%	80 - 120
			Total Tin (Sn)	2024/07/25		111	%	80 - 120
			Total Titanium (Ti)	2024/07/25		109	%	80 - 120
			Total Uranium (U)	2024/07/25		111	%	80 - 120
			Total Vanadium (V)	2024/07/25		108	%	80 - 120
			Total Zinc (Zn)	2024/07/25		105	%	80 - 120
			Total Beryllium (Be)	2024/07/25		111	%	80 - 120

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B453310	VSC	LCS	Total Iron (Fe)	2024/07/25		94	%	80 - 120
			Total Lithium (Li)	2024/07/25		98	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		102	%	80 - 120
			Total Manganese (Mn)	2024/07/25		90	%	80 - 120
			Total Potassium (K)	2024/07/25		97	%	80 - 120
			Total Sodium (Na)	2024/07/25		94	%	80 - 120
			Total Strontium (Sr)	2024/07/25		102	%	80 - 120
			Total Sulphur (S)	2024/07/25		92	%	80 - 120
			Total Phosphorus (P)	2024/07/25		94	%	80 - 120
			Total Barium (Ba)	2024/07/25		102	%	80 - 120
			Total Silicon (Si)	2024/07/25		89	%	80 - 120
			Total Boron (B)	2024/07/25		95	%	80 - 120
			Total Calcium (Ca)	2024/07/25		97	%	80 - 120
B454058	HE1	LCS	Total Suspended Solids	2024/07/26		103	%	80 - 120
B460547	JYU	LCS	Dissolved Organic Carbon (C)	2024/07/31		97	%	80 - 120
B460844	JYU	LCS	Total Organic Carbon (C)	2024/07/31		101	%	80 - 120
B452399	YL7	SRM	Total Nitrogen (N)	2024/07/25		104	%	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

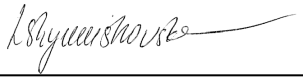
Bureau Veritas Job #: C455350
Report Date: 2024/07/31

Advisian
Task Order#: 417085-54419
Site#:
Site Location: NORMA WELLS, NT
Project #: 417085-54419-24200

VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Qiliang (Alex) Wu, Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

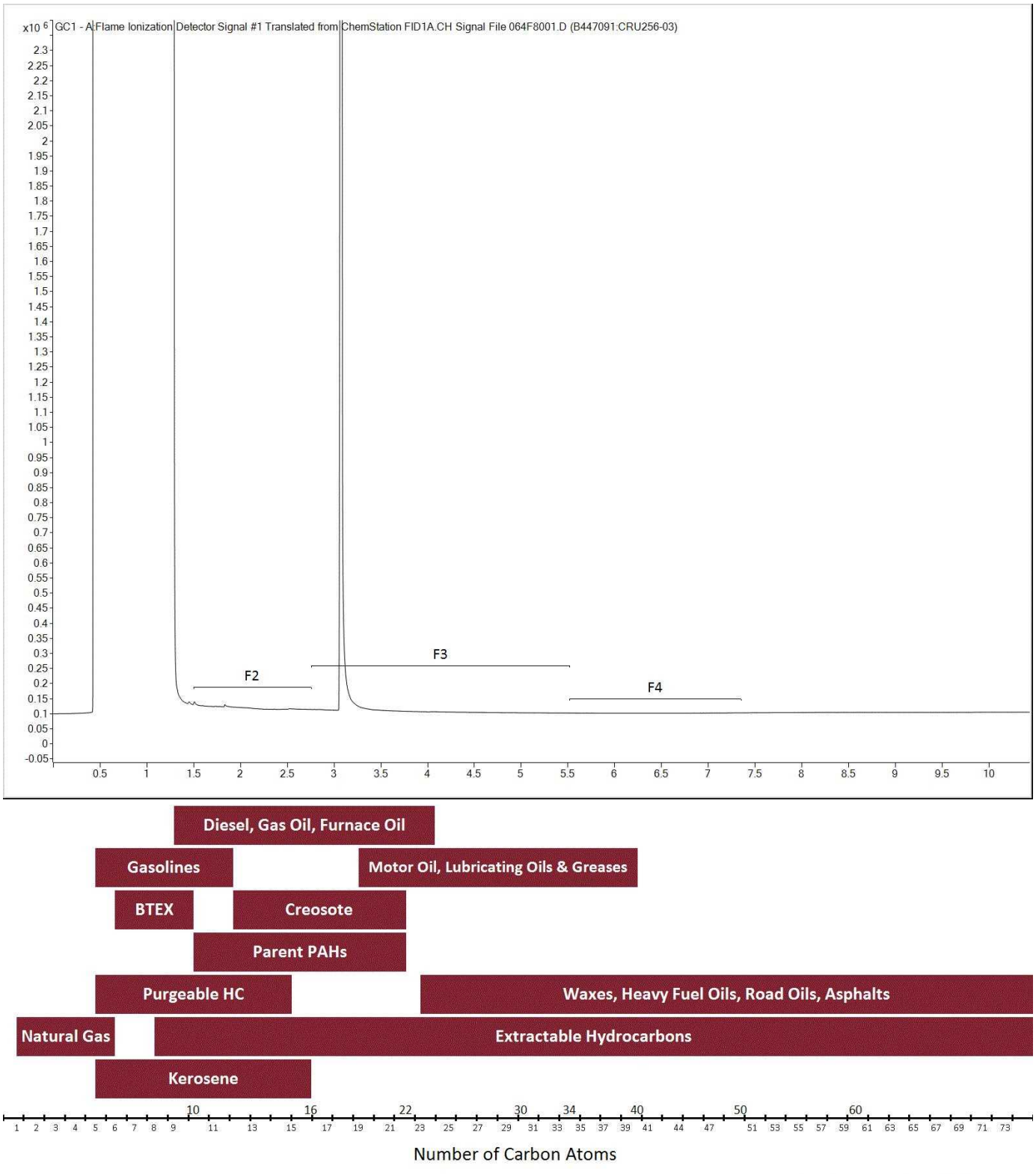
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455350
Report Date: 2024/07/31
Bureau Veritas Sample: CRU256

Advisian
Task Order#:417085-54419Line Item:
Site#:
Site Location: NORMA WELLS, NT
Client ID: AEMP-DS-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



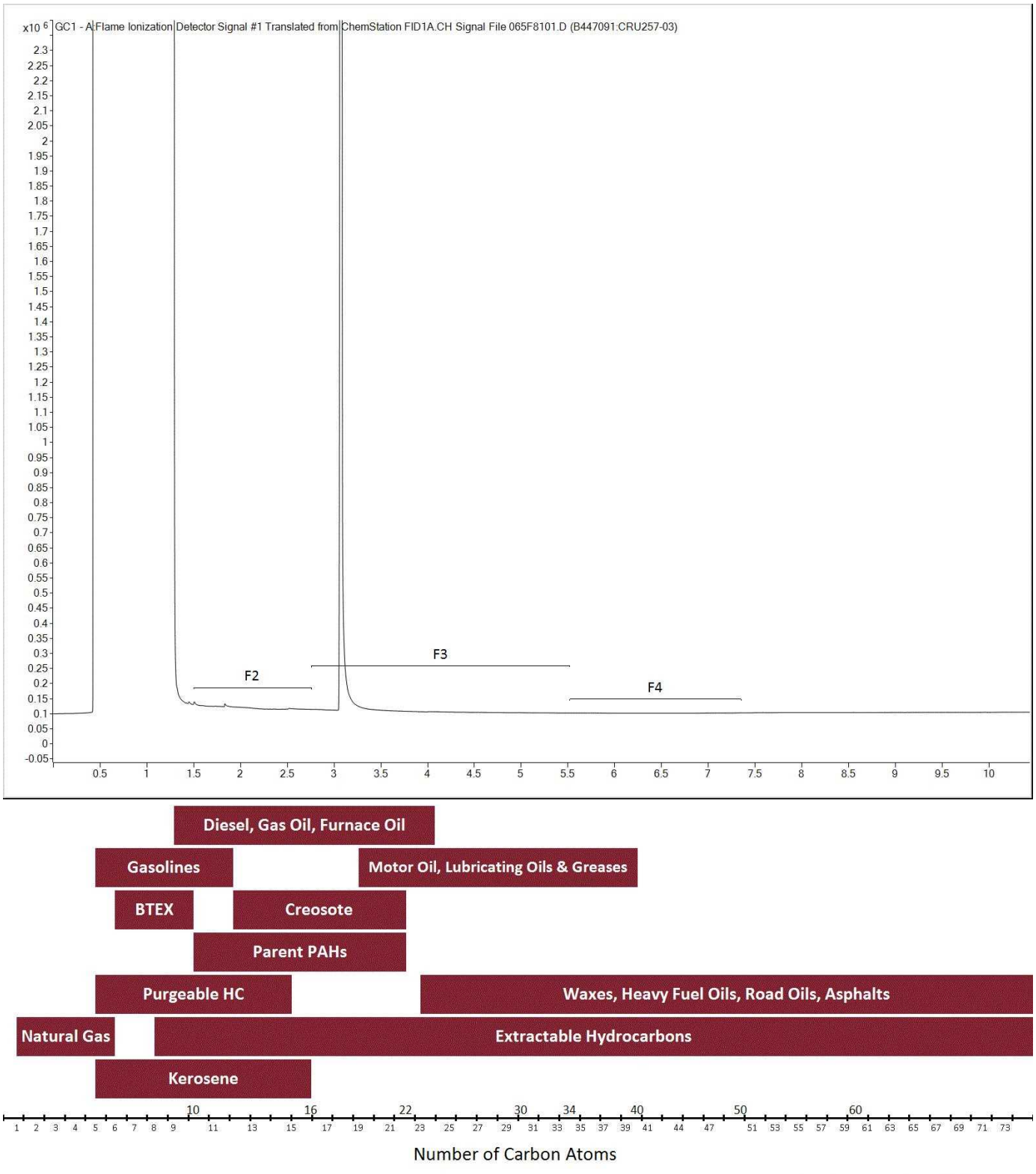
hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Bureau Veritas Job #: C455350
Report Date: 2024/07/31
Bureau Veritas Sample: CRU257

Advisian
Task Order#:417085-54419Line Item:
Site#:
Site Location: NORMA WELLS, NT
Client ID: AEMP-DUP1

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

C455350
2024/07/22 13:17

Maxxam
A Bureau Veritas Group Company

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4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292209

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd. SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 892 6249	Ph: 587 892 6249
Sampler Name (Print): STACY GIBB/TINO NGULUBE	Consultant Project #: 417085-54419-24200

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	ANALYSIS REQUESTED: VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	Total color, TSS, TDS, Turbidity	oil and grease	TOC, DOC, SULPHIDE	Nitrate, Nitrite, Ammonia (total) TKN	ORTHOPHOSPHATE	SULPHATE - TOTAL, DISSOLVED	COD	ALKYLATED PAH, TPH
1 AEMP-DS-02		X			18	2024/07/20	17:05	X			X	X							X	X					X			X		X	X	X	X	X
2 AEMP-DUP1		X			18	2024/07/20	17:05	X			X	X							X	X					X			X		X	X	X	X	X
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		

med2-2024-07-696

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS:
canada.chemistry@worley.com
carol_IOL@datatruck@worley.com
stacy.gibb@worley.com
JES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #				YES	NO	COOLER ID #				YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	3 (1)	3 (2)	4 (3)	SEAL PRESENT		TEMP °C	1	2	3	SEAL PRESENT		TEMP °C	1	2	3
SEAL INTACT	✓						SEAL INTACT						SEAL INTACT					
COOLING MEDIA PRESENT	✓						COOLING MEDIA PRESENT						COOLING MEDIA PRESENT					

LAB USE ONLY
MAXXAM JOB #

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1. Stacy Gibb	2024/07/21	10:30	1. BRENTON MAH	2024/07/22	13:17
2.			2.		
3.			3.		

SAMPLES
LABELED BY:
VERIFIED BY:

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292209

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd. SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 892 6249	Ph: 587 892 6249
Sampler Name (Print): STACY GIBB/TINO NGULUBE	Consultant Project #: 417085 - 54419 - 24200

FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	oil and grease	TOC, DOC, SULPHIDE	Nitrate, Nitrite, Ammonia (total) TKN	ORTHOPHOSPHATE	SULPHUR - TOTAL, DISSOLVED	COD	ALKYLATED PAH, TPH
1 AEMP-DS-02		X			18	2024/07/20	17:05	X			X	X							X	X					X			X		X	X	X	X	X	X
2 AEMP-DUP1		X			18	2024/07/20	17:05	X			X	X							X	X					X			X		X	X	X	X	X	X
3																																			
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			

med2-2024-07-696

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085 - 54419 - 24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS:
canada.chemistry@worley.com
carcal_IOLdatatrack@worley.com
stacy.gibb@worley.com
JES A2601436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	3	3	4
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

MCAL

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	6.1	6.1	6.1
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C455350

SAMPLES
LABELED BY: SMT
VERIFIED BY: SJS

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/07/21	10:30	1.	BRENTON MAH	2024/07/22	13:17
2.	Kyle VanThournout	2024/07/22	1800	2.	NAVDEEP GILL	2024/07/23	07:00
3.				3.			

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200
Your C.O.C. #: 292208

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537499
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455358
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

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Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

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(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
06 Aug 2024 10:05:54

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C455358
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
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Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B447091
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B450866
Toluene	mg/L	<0.00040	<0.00040	0.00040	B450866
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B450866
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B450866
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B450866
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B448620
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B448620
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B450866
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	101	103		B447091
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	93	91		B450866
4-Bromofluorobenzene (sur.)	%	109	110		B450866
D4-1,2-Dichloroethane (sur.)	%	86	85		B450866
RDL = Reportable Detection Limit					

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Task Order#: 417085-54419
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Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	<0.20	0.20	B448825
Nutrients					
Total Nitrogen (N)	mg/L	<0.20 (1)	<0.20 (1)	0.20	B452399

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	0.00022	0.00027	0.000020	B449080
Total Mercury (Hg)	ug/L	0.012	0.017	0.0019	B451614
Total Aluminum (Al)	mg/L	3.2	4.5	0.0030	B453304
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B453304
Total Arsenic (As)	mg/L	0.0043	0.0048	0.00020	B453304
Total Barium (Ba)	mg/L	0.12	0.14	0.010	B453310
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B453304
Total Boron (B)	mg/L	0.025	0.025	0.020	B453310
Total Calcium (Ca)	mg/L	40	42	0.30	B453310
Total Chromium (Cr)	mg/L	0.0061	0.0074	0.0010	B453304
Total Cobalt (Co)	mg/L	0.0041	0.0049	0.00030	B453304
Total Copper (Cu)	mg/L	0.0083	0.010	0.0010	B453304
Total Iron (Fe)	mg/L	8.2	9.6	0.060	B453310
Total Lead (Pb)	mg/L	0.0046	0.0049	0.00020	B453304
Total Lithium (Li)	mg/L	<0.026	<0.026	0.026	B453310
Total Magnesium (Mg)	mg/L	12	13	0.20	B453310
Total Manganese (Mn)	mg/L	0.13	0.15	0.0040	B453310
Total Molybdenum (Mo)	mg/L	0.0014	0.0015	0.00020	B453304
Total Nickel (Ni)	mg/L	0.014	0.016	0.00050	B453304
Total Phosphorus (P)	mg/L	0.15	0.17	0.10	B453310
Total Potassium (K)	mg/L	2.1	2.2	0.30	B453310
Total Selenium (Se)	mg/L	0.00053	0.00064	0.00020	B453304
Total Silicon (Si)	mg/L	5.7	6.3	0.50	B453310
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B453304
Total Sodium (Na)	mg/L	7.6	7.1	0.50	B453310
Total Strontium (Sr)	mg/L	0.24	0.24	0.020	B453310
Total Sulphur (S)	mg/L	15	14	0.20	B453310
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B453304
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B453304
Total Titanium (Ti)	mg/L	0.035	0.041	0.0010	B453304
Total Uranium (U)	mg/L	0.0011	0.0012	0.00010	B453304
RDL = Reportable Detection Limit					

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REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.012	0.014	0.0010	B453304
Total Zinc (Zn)	mg/L	0.064	0.065	0.0030	B453304
RDL = Reportable Detection Limit					

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Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU297		CRU298		
Sampling Date		2024/07/19 10:34		2024/07/19 09:36		
COC Number		292208		292208		
	UNITS	**AEMP-DS_08**	**RDL**	**AEMP-DS_05**	**RDL**	**QC Batch**
Calculated Parameters						
Hardness (CaCO3)	mg/L	130	0.50	130	0.50	B448621
Ion Balance (% Difference)	%	1.8	N/A	1.5	N/A	B448624
Nitrate (N)	mg/L	0.17	0.010	0.085	0.010	B448622
Nitrate (NO3)	mg/L	0.74	0.044	0.38	0.044	B448626
Nitrite (NO2)	mg/L	<0.033	0.033	<0.033	0.033	B448626
Sulphide (as H2S)	mg/L	0.031	0.0020	0.030	0.0020	B449088
Demand Parameters						
Chemical Oxygen Demand	mg/L	<10 (1)	10	10	10	B450983
Elements						
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	<0.000020	0.000020	B448623
Misc. Inorganics						
Conductivity	uS/cm	290	2.0	290	2.0	B452120
Dissolved Organic Carbon (C)	mg/L	4.2	0.50	3.7	0.50	B452982
pH	pH	7.78	N/A	7.90	N/A	B452117
Total Organic Carbon (C)	mg/L	3.3	0.50	3.1	0.50	B454264
Total Dissolved Solids	mg/L	180	10	180	10	B452377
Total Suspended Solids	mg/L	210 (2)	1.5	280 (2)	1.9	B454058
Anions						
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	B452112
Alkalinity (Total as CaCO3)	mg/L	88	1.0	92	1.0	B452112
Bicarbonate (HCO3)	mg/L	110	1.0	110	1.0	B452112
Carbonate (CO3)	mg/L	<1.0	1.0	<1.0	1.0	B452112
Hydroxide (OH)	mg/L	<1.0	1.0	<1.0	1.0	B452112
Total Sulphide	mg/L	0.029	0.0018	0.029	0.0018	B449830
Chloride (Cl)	mg/L	7.7	1.0	7.6	1.0	B450415
Sulphate (SO4)	mg/L	49	1.0	47	1.0	B450415

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

(2) Detection limit raised based on sample volume used for analysis.

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU297		CRU298		
Sampling Date		2024/07/19 10:34		2024/07/19 09:36		
COC Number		292208		292208		
	UNITS	**AEMP-DS_08**	**RDL**	**AEMP-DS_05**	**RDL**	**QC Batch**
Nutrients						
Total Ammonia (N)	mg/L	<0.015	0.015	<0.015	0.015	B451335
Orthophosphate (P)	mg/L	<0.0030	0.0030	<0.0030	0.0030	B449924
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	B450936
Nitrate plus Nitrite (N)	mg/L	0.17	0.010	0.085	0.010	B450936
Misc. Organics						
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	<2.0	2.0	B450322
Physical Properties						
True Colour	PtCo units	6.3	2.0	6.7	2.0	B450297
Physical Properties						
Turbidity	NTU	200	0.10	250	0.10	B449456
RDL = Reportable Detection Limit						

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B449091
Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B445873
Acridine	ug/L	<0.040	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Perylene	ug/L	<0.050	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	<0.20	0.20	B445873
Retene	ug/L	<0.050	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C2-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C3-fluorene	ug/L	<0.050	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	0.055	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	0.030	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	0.028	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.018	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	113	120		B445873
D8-ACENAPHTHYLENE (sur.)	%	107	110		B445873
D8-NAPHTHALENE (sur.)	%	100	98		B445873
TERPHENYL-D14 (sur.)	%	122	135 (1)		B445873

RDL = Reportable Detection Limit

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

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B451604
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU297	CRU298		
Sampling Date		2024/07/19 10:34	2024/07/19 09:36		
COC Number		292208	292208		
	UNITS	**AEMP-DS_08**	**AEMP-DS_05**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.036	0.030	0.0030	B452541
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B452541
Dissolved Arsenic (As)	mg/L	0.00030	0.00027	0.00020	B452541
Dissolved Barium (Ba)	mg/L	0.046	0.046	0.010	B452036
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B452036
Dissolved Calcium (Ca)	mg/L	35	36	0.30	B452036
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B452541
Dissolved Copper (Cu)	mg/L	0.0011	0.0014	0.0010	B452541
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B452036
Dissolved Lead (Pb)	mg/L	0.00073	<0.00020	0.00020	B452541
Dissolved Lithium (Li)	mg/L	<0.020	0.033	0.020	B452036
Dissolved Magnesium (Mg)	mg/L	9.9	9.9	0.20	B452036
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B452036
Dissolved Molybdenum (Mo)	mg/L	0.00085	0.00093	0.00020	B452541
Dissolved Nickel (Ni)	mg/L	0.0010	0.00092	0.00050	B452541
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B452036
Dissolved Potassium (K)	mg/L	0.93	0.95	0.30	B452036
Dissolved Selenium (Se)	mg/L	0.00036	0.00037	0.00020	B452541
Dissolved Silicon (Si)	mg/L	1.5	1.4	0.50	B452036
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B452541
Dissolved Sodium (Na)	mg/L	7.7	7.4	0.50	B452036
Dissolved Strontium (Sr)	mg/L	0.21	0.21	0.020	B452036
Dissolved Sulphur (S)	mg/L	15	15	0.20	B452036
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B452541
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Uranium (U)	mg/L	0.00072	0.00077	0.00010	B452541
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B452541
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C455358
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

TEST SUMMARY

Bureau Veritas ID: CRU297
Sample ID: AEMP-DS_08
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452982	N/A	2024/07/25	Ming Dong
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B451614	2024/07/24	2024/07/24	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453310	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453304	2024/07/25	2024/07/25	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/25	Automated Statchk
Ammonia-N (Total)	KONE	B451335	N/A	2024/07/24	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/31	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU298
Sample ID: AEMP-DS_05
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly

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Bureau Veritas Job #: C455358
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

TEST SUMMARY

Bureau Veritas ID: CRU298
Sample ID: AEMP-DS_05
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452982	N/A	2024/07/25	Ming Dong
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B451614	2024/07/24	2024/07/24	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453310	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453304	2024/07/25	2024/07/25	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B451335	N/A	2024/07/24	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/31	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

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GENERAL COMMENTS

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

Package 1	3.0°C

Sample CRU297 [AEMP-DS_08] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CRU298 [AEMP-DS_05] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

RESULTS OF CHEMICAL ANALYSES OF WATER Comments

Sample CRU298 [AEMP-DS_05] Orthophosphate by Automated Analyzer: Sample of job C455358, C455387,C455335,C455339,C455346 analyzed past hold time. Sample analysis is recommended within 3 days of sampling.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B449456	DVN	Method Blank	Turbidity	2024/07/23	<0.10		NTU	
B449830	NJD	Method Blank	Total Sulphide	2024/07/23	<0.0018		mg/L	
B449924	YL7	Method Blank	Orthophosphate (P)	2024/07/23	<0.0030		mg/L	
B450297	TOR	Method Blank	True Colour	2024/07/23	<2.0		PtCo units	
B450322	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/25	<2.0		mg/L	
B450415	TOR	Method Blank	Chloride (Cl)	2024/07/23	<1.0		mg/L	
			Sulphate (SO4)	2024/07/23	<1.0		mg/L	
B450866	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		90	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		85	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B450936	AFI	Method Blank	Nitrite (N)	2024/07/24	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/24	<0.010		mg/L	
B450983	AP1	Method Blank	Chemical Oxygen Demand	2024/07/24	<10		mg/L	
B451335	AFI	Method Blank	Total Ammonia (N)	2024/07/24	<0.015		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B451614	KHU	Method Blank	Total Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452036	VSC	Method Blank	Dissolved Iron (Fe)	2024/07/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/07/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/24	<0.30		mg/L	
B452112	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	
B452120	JVM	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452377	DVN	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	
B452399	YL7	Method Blank	Total Nitrogen (N)	2024/07/25	<0.020		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B452541	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452982	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/07/25	<0.50		mg/L	
B453304	JAB	Method Blank	Total Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Total Uranium (U)	2024/07/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B453310	VSC	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.026		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B454058	HE1	Method Blank	Total Suspended Solids	2024/07/26	<1.0		mg/L	
B454264	JYU	Method Blank	Total Organic Carbon (C)	2024/07/26	<0.50		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130
			Pyrene	2024/07/30		90	%	50 - 130
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B449456	DVN	LCS	Turbidity	2024/07/23		99	%	80 - 120
B449830	NJD	LCS	Total Sulphide	2024/07/23		100	%	80 - 120
B449924	YL7	LCS	Orthophosphate (P)	2024/07/23		101	%	80 - 120
B450297	TOR	LCS	True Colour	2024/07/23		107	%	80 - 120
B450322	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/25		89	%	70 - 130
B450415	TOR	LCS	Chloride (Cl)	2024/07/23		105	%	80 - 120
			Sulphate (SO4)	2024/07/23		105	%	80 - 120
B450866	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		87	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		88	%	50 - 140
			Benzene	2024/07/24		84	%	60 - 130
			Toluene	2024/07/24		88	%	60 - 130
			Ethylbenzene	2024/07/24		91	%	60 - 130
			m & p-Xylene	2024/07/24		83	%	60 - 130
			o-Xylene	2024/07/24		86	%	60 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			F1 (C6-C10)	2024/07/24		105	%	60 - 140
B450936	AFI	LCS	Nitrite (N)	2024/07/24		104	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/24		108	%	80 - 120
B450983	AP1	LCS	Chemical Oxygen Demand	2024/07/24		101	%	80 - 120
B451335	AFI	LCS	Total Ammonia (N)	2024/07/24		103	%	80 - 120
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B451614	KHU	LCS	Total Mercury (Hg)	2024/07/24		101	%	80 - 120
B452036	VSC	LCS	Dissolved Iron (Fe)	2024/07/24		93	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		93	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		91	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		97	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		88	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		93	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/24		95	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		90	%	80 - 120
			Dissolved Silicon (Si)	2024/07/24		88	%	80 - 120
			Dissolved Boron (B)	2024/07/24		91	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/24		93	%	80 - 120
B452112	JVM	LCS	Alkalinity (Total as CaCO3)	2024/07/25		100	%	80 - 120
B452117	JVM	LCS	pH	2024/07/25		100	%	97 - 103
B452120	JVM	LCS	Conductivity	2024/07/25		101	%	90 - 110
B452377	DVN	LCS	Total Dissolved Solids	2024/07/26		98	%	80 - 120
B452399	YL7	LCS	Total Nitrogen (N)	2024/07/25		105	%	80 - 120
B452541	JAB	LCS	Dissolved Aluminum (Al)	2024/07/25		103	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/25		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		104	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		103	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		104	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		98	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		100	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		106	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B452982	MDO	LCS	Dissolved Organic Carbon (C)	2024/07/25		104	%	80 - 120
B453304	JAB	LCS	Total Aluminum (Al)	2024/07/25		109	%	80 - 120
			Total Chromium (Cr)	2024/07/25		107	%	80 - 120
			Total Cobalt (Co)	2024/07/25		109	%	80 - 120
			Total Copper (Cu)	2024/07/25		107	%	80 - 120
			Total Lead (Pb)	2024/07/25		105	%	80 - 120
			Total Antimony (Sb)	2024/07/25		109	%	80 - 120
			Total Molybdenum (Mo)	2024/07/25		109	%	80 - 120
			Total Nickel (Ni)	2024/07/25		108	%	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
			Total Selenium (Se)	2024/07/25		104	%	80 - 120
			Total Silver (Ag)	2024/07/25		109	%	80 - 120
			Total Arsenic (As)	2024/07/25		107	%	80 - 120
			Total Thallium (Tl)	2024/07/25		108	%	80 - 120
			Total Tin (Sn)	2024/07/25		111	%	80 - 120
			Total Titanium (Ti)	2024/07/25		109	%	80 - 120
			Total Uranium (U)	2024/07/25		111	%	80 - 120
			Total Vanadium (V)	2024/07/25		108	%	80 - 120
			Total Zinc (Zn)	2024/07/25		105	%	80 - 120
			Total Beryllium (Be)	2024/07/25		111	%	80 - 120
B453310	VSC	LCS	Total Iron (Fe)	2024/07/25		94	%	80 - 120
			Total Lithium (Li)	2024/07/25		98	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		102	%	80 - 120
			Total Manganese (Mn)	2024/07/25		90	%	80 - 120
			Total Potassium (K)	2024/07/25		97	%	80 - 120
			Total Sodium (Na)	2024/07/25		94	%	80 - 120
			Total Strontium (Sr)	2024/07/25		102	%	80 - 120
			Total Sulphur (S)	2024/07/25		92	%	80 - 120
			Total Phosphorus (P)	2024/07/25		94	%	80 - 120
			Total Barium (Ba)	2024/07/25		102	%	80 - 120
			Total Silicon (Si)	2024/07/25		89	%	80 - 120
			Total Boron (B)	2024/07/25		95	%	80 - 120
			Total Calcium (Ca)	2024/07/25		97	%	80 - 120
B454058	HE1	LCS	Total Suspended Solids	2024/07/26		103	%	80 - 120
B454264	JYU	LCS	Total Organic Carbon (C)	2024/07/26		100	%	80 - 120
B452399	YL7	SRM	Total Nitrogen (N)	2024/07/25		104	%	80 - 120

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

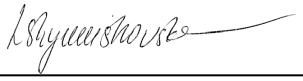
Bureau Veritas Job #: C455358
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419.24200

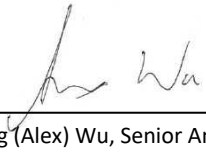
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



Qiliang (Alex) Wu, Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Automated Statchk

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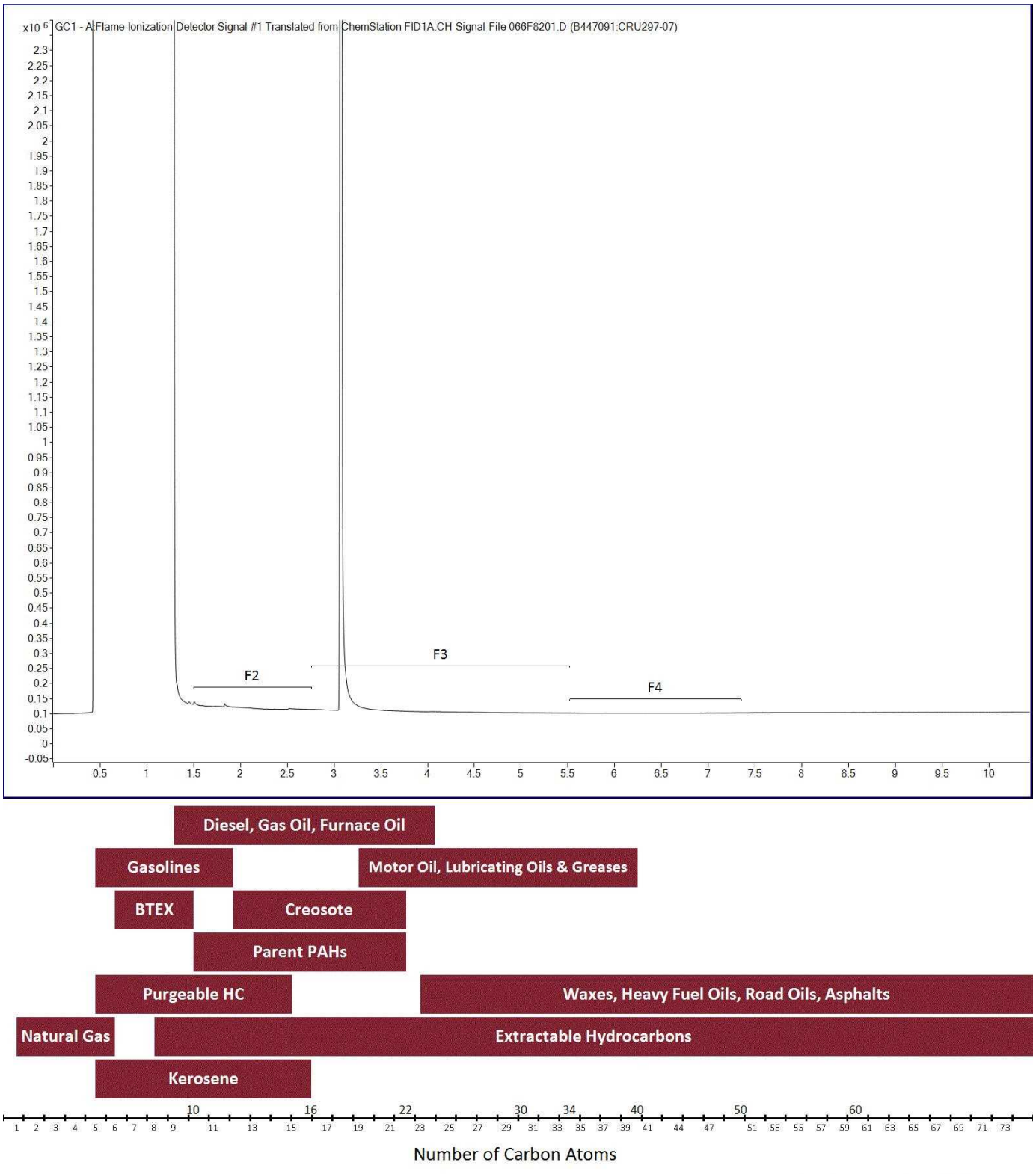
Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455358
Report Date: 2024/08/06
Bureau Veritas Sample: CRU297

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS_08

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



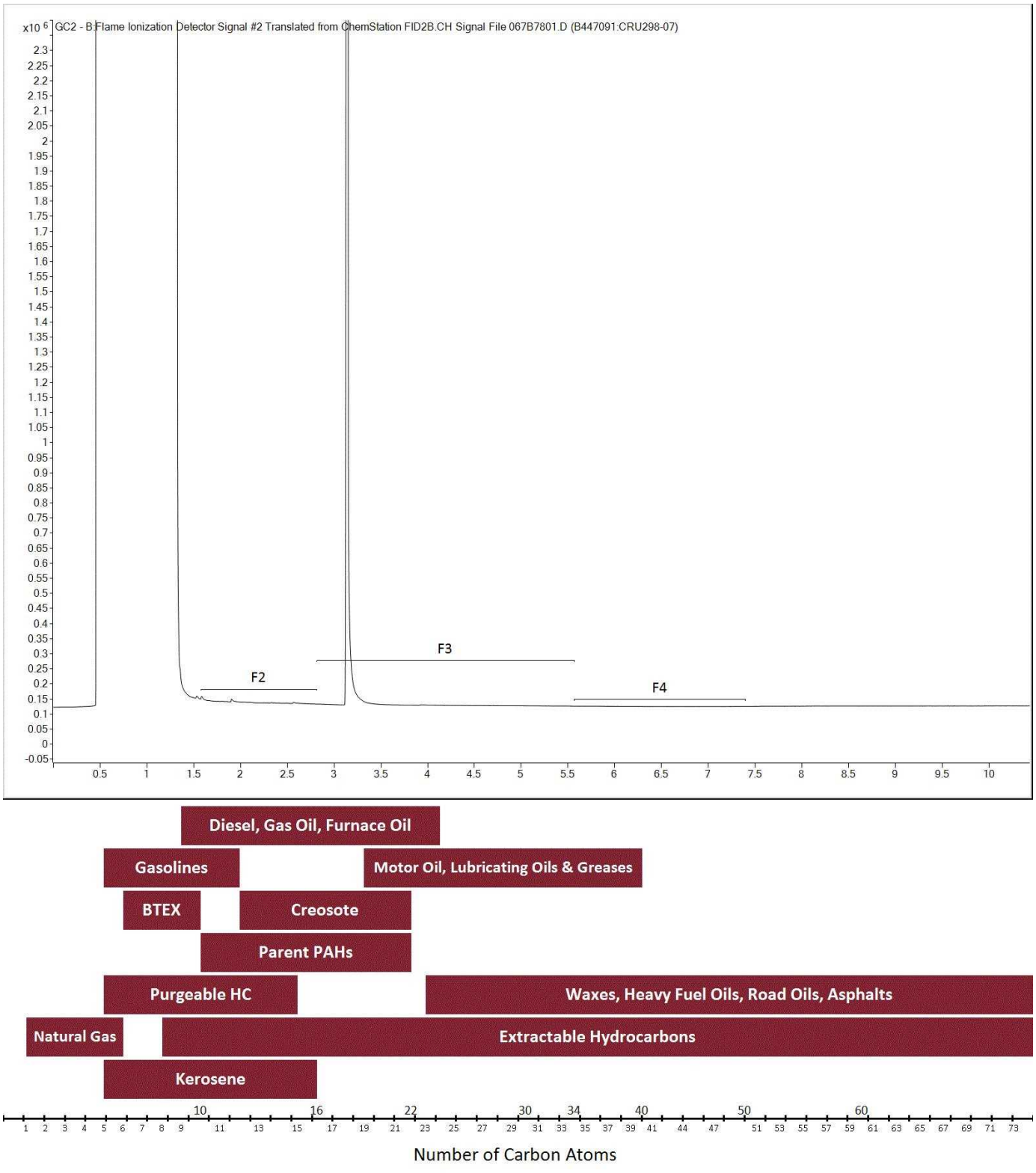
hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Bureau Veritas Job #: C455358
Report Date: 2024/08/06
Bureau Veritas Sample: CRU298

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS_05

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

Maxxam
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EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292208

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: WORLEY
Contact Name: ALEX HAIGH	Contact Name: ALEX HAIGH
Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7	Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7
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Ph: 587 897 6249	Ph: 587 897 6249
Sampler Name (Print): TINO NGUMBE / STACY GIBB	Consultant Project #: 417085-54419.24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1	AEMP-DS-08		X			18	2024/07/19	10:34	X	
2	AEMP-DS-05		X			18	2024/07/19	9:36	X	
3										
4										
5										
6										
7										
8										
9										
10										

ANALYSIS REQUESTED

	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	O&G + GREASE	TOC, DOC, SULPHIDE	NITRATE, NITRITE, AMMONIA (TOTAL), TKN	ORTHOPHOSPHATE	SULPHUR - TOTAL + DISSOLVED	COD	ALKYLATED PAH, TPH
1		X	X							X	X					X			X		X	X	X	X	X
2		X	X							X	X					X			X		X	X	X	X	X
3																X			X		X	X	X	X	X

med2-2024-07-690

IOL SITE LOCATION: NORMAN WELLS, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419.24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com cacci-IORdatatrack@worley.com stacy.gibb@worley.com

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

LAB USE ONLY
MAXXAM JOB #

SAMPLES
LABELED BY:
VERIFIED BY:

	YES	NO	COOLER ID #	TEMP °C 1	2	3
PRESENT	✓		MCAL			
ACT	✓					
EDIA PRESENT	✓					

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
Stacy Gibb	2024/07/21	10:30	1.		
Kyle VanThournout	2024/07/22	1800	2.	2024/07/22	13:17
			3.	2024/07/23	07:50

BRENTON MATH
NAVDEEP GILL

6) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292207

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537512
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455364
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

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Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292207

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537512
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455364
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292207

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537512
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455364

Received: 2024/07/22, 13:17

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
06 Aug 2024 11:13:57

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C455364
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU337	CRU338		
Sampling Date		2024/07/19 12:18	2024/07/19 12:18		
COC Number		292207	292207		
	UNITS	**AEMP-DS-03**	**AEMP-US-05**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B447091
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B450866
Toluene	mg/L	<0.00040	<0.00040	0.00040	B450866
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B450866
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B450866
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B450866
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B448620
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B448620
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B450866
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	102	104		B447091
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	96	95		B450866
4-Bromofluorobenzene (sur.)	%	115	113		B450866
D4-1,2-Dichloroethane (sur.)	%	88	86		B450866
RDL = Reportable Detection Limit					

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TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRU337		CRU338		
Sampling Date		2024/07/19 12:18		2024/07/19 12:18		
COC Number		292207		292207		
	UNITS	**AEMP-DS-03**	**RDL**	**AEMP-US-05**	**RDL**	**QC Batch**
Calculated Parameters						
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	0.20	0.099	0.020	B448825
Nutrients						
Total Nitrogen (N)	mg/L	0.25 (1)	0.20	0.17	0.020	B452399

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU337	CRU338		
Sampling Date		2024/07/19 12:18	2024/07/19 12:18		
COC Number		292207	292207		
	UNITS	**AEMP-DS-03**	**AEMP-US-05**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	0.00027	<0.000020	0.000020	B449080
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B452451
Total Aluminum (Al)	mg/L	4.8	0.022	0.0030	B453304
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B453304
Total Arsenic (As)	mg/L	0.0049	0.00023	0.00020	B453304
Total Barium (Ba)	mg/L	0.15	0.084	0.010	B453310
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B453304
Total Boron (B)	mg/L	0.023	0.045	0.020	B453310
Total Calcium (Ca)	mg/L	47	79	0.30	B453310
Total Chromium (Cr)	mg/L	0.0077	<0.0010	0.0010	B453304
Total Cobalt (Co)	mg/L	0.0051	<0.00030	0.00030	B453304
Total Copper (Cu)	mg/L	0.010	<0.0010	0.0010	B453304
Total Iron (Fe)	mg/L	9.9	<0.060	0.060	B453310
Total Lead (Pb)	mg/L	0.0050	<0.00020	0.00020	B453304
Total Lithium (Li)	mg/L	<0.026	<0.026	0.026	B453310
Total Magnesium (Mg)	mg/L	14	32	0.20	B453310
Total Manganese (Mn)	mg/L	0.16	0.0061	0.0040	B453310
Total Molybdenum (Mo)	mg/L	0.0016	0.0019	0.00020	B453304
Total Nickel (Ni)	mg/L	0.017	0.0011	0.00050	B453304
Total Phosphorus (P)	mg/L	0.18	<0.10	0.10	B453310
Total Potassium (K)	mg/L	2.2	1.1	0.30	B453310
Total Selenium (Se)	mg/L	0.00065	<0.00020	0.00020	B453304
Total Silicon (Si)	mg/L	6.4	2.2	0.50	B453310
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B453304
Total Sodium (Na)	mg/L	6.9	26	0.50	B453310
Total Strontium (Sr)	mg/L	0.26	1.7	0.020	B453310
Total Sulphur (S)	mg/L	17	52	0.20	B453310
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B453304
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B453304
Total Titanium (Ti)	mg/L	0.041	<0.0010	0.0010	B453304
Total Uranium (U)	mg/L	0.0012	0.0012	0.00010	B453304
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU337	CRU338		
Sampling Date		2024/07/19 12:18	2024/07/19 12:18		
COC Number		292207	292207		
	UNITS	**AEMP-DS-03**	**AEMP-US-05**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.014	<0.0010	0.0010	B453304
Total Zinc (Zn)	mg/L	0.066	<0.0030	0.0030	B453304
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455364
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU337			CRU337			CRU338		
Sampling Date		2024/07/19 12:18			2024/07/19 12:18			2024/07/19 12:18		
COC Number		292207			292207			292207		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-05**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	140	0.50	B448621				330	0.50	B448621
Ion Balance (% Difference)	%	1.7	N/A	B448624				1.3	N/A	B448624
Nitrate (N)	mg/L	0.091	0.010	B448622				0.074	0.010	B448622
Nitrate (NO3)	mg/L	0.40	0.044	B448626				0.33	0.044	B448626
Nitrite (NO2)	mg/L	<0.033	0.033	B448626				<0.033	0.033	B448626
Sulphide (as H2S)	mg/L	0.028	0.0020	B449088				<0.0020	0.0020	B449088
Demand Parameters										
Chemical Oxygen Demand	mg/L	25	10	B450983				<10 (1)	10	B450983
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B448623				<0.000020	0.000020	B448623
Misc. Inorganics										
Conductivity	uS/cm	310	2.0	B452120				740	2.0	B452120
Dissolved Organic Carbon (C)	mg/L	4.4	0.50	B457234	4.5	0.50	B457234	2.8	0.50	B452982
pH	pH	7.82	N/A	B452117				8.34	N/A	B452117
Total Organic Carbon (C)	mg/L	3.5	0.50	B457260				2.2	0.50	B454264
Total Dissolved Solids	mg/L	190	10	B452377				460	10	B452377
Total Suspended Solids	mg/L	260 (2)	2.1	B454058				1.9	1.0	B454058
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B452112				1.8	1.0	B452112
Alkalinity (Total as CaCO3)	mg/L	95	1.0	B452112				180	1.0	B452112
Bicarbonate (HCO3)	mg/L	120	1.0	B452112				210	1.0	B452112
Carbonate (CO3)	mg/L	<1.0	1.0	B452112				2.2	1.0	B452112
Hydroxide (OH)	mg/L	<1.0	1.0	B452112				<1.0	1.0	B452112
Total Sulphide	mg/L	0.026	0.0018	B449830				<0.0018 (3)	0.0018	B449830
Chloride (Cl)	mg/L	6.9	1.0	B450415	6.9	1.0	B450415	33	1.0	B450415

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < DOC: Both values fall within the method uncertainty for duplicates and are likely equivalent. COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.
(2) Detection limit raised based on sample volume used for analysis.
(3) Sample pH <9, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455364
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU337			CRU337			CRU338		
Sampling Date		2024/07/19 12:18			2024/07/19 12:18			2024/07/19 12:18		
COC Number		292207			292207			292207		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-05**	**RDL**	**QC Batch**
Sulphate (SO4)	mg/L	57	1.0	B450415	57	1.0	B450415	170	5.0	B450415
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B452969				<0.015	0.015	B452969
Orthophosphate (P)	mg/L	<0.0030	0.0030	B449924				<0.0030	0.0030	B449924
Nitrite (N)	mg/L	<0.010	0.010	B450936				<0.010	0.010	B450936
Nitrate plus Nitrite (N)	mg/L	0.091	0.010	B450936				0.074	0.010	B450936
Misc. Organics										
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B450322				<2.0	2.0	B450322
Physical Properties										
True Colour	PtCo units	9.0	2.0	B450297				8.0	2.0	B450297
Physical Properties										
Turbidity	NTU	240	0.10	B449456				1.5	0.10	B449456

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU337	CRU338		
Sampling Date		2024/07/19 12:18	2024/07/19 12:18		
COC Number		292207	292207		
	UNITS	**AEMP-DS-03**	**AEMP-US-05**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B449091
Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B445873
Acridine	ug/L	<0.040	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Perylene	ug/L	<0.050	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	<0.20	0.20	B445873
Retene	ug/L	<0.050	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU337	CRU338		
Sampling Date		2024/07/19 12:18	2024/07/19 12:18		
COC Number		292207	292207		
	UNITS	**AEMP-DS-03**	**AEMP-US-05**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C2-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C3-fluorene	ug/L	<0.050	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	126	122		B445873
D8-ACENAPHTHYLENE (sur.)	%	116	110		B445873
D8-NAPHTHALENE (sur.)	%	103	96		B445873
TERPHENYL-D14 (sur.)	%	135 (1)	132 (1)		B445873

RDL = Reportable Detection Limit

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

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRU337	CRU338		
Sampling Date		2024/07/19 12:18	2024/07/19 12:18		
COC Number		292207	292207		
	UNITS	**AEMP-DS-03**	**AEMP-US-05**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	0.0087	<0.0019	0.0019	B451604
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU337	CRU338		
Sampling Date		2024/07/19 12:18	2024/07/19 12:18		
COC Number		292207	292207		
	UNITS	**AEMP-DS-03**	**AEMP-US-05**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.048	<0.0030	0.0030	B452541
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B452541
Dissolved Arsenic (As)	mg/L	0.00023	0.00023	0.00020	B452541
Dissolved Barium (Ba)	mg/L	0.050	0.082	0.010	B452036
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Boron (B)	mg/L	<0.020	0.031	0.020	B452036
Dissolved Calcium (Ca)	mg/L	39	80	0.30	B452036
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B452541
Dissolved Copper (Cu)	mg/L	0.0012	<0.0010	0.0010	B452541
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B452036
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B452541
Dissolved Lithium (Li)	mg/L	<0.020	0.035	0.020	B452036
Dissolved Magnesium (Mg)	mg/L	11	31	0.20	B452036
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0045	0.0040	B452036
Dissolved Molybdenum (Mo)	mg/L	0.00095	0.0016	0.00020	B452541
Dissolved Nickel (Ni)	mg/L	0.00098	0.00063	0.00050	B452541
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B452036
Dissolved Potassium (K)	mg/L	0.95	1.2	0.30	B452036
Dissolved Selenium (Se)	mg/L	0.00044	<0.00020	0.00020	B452541
Dissolved Silicon (Si)	mg/L	1.6	2.2	0.50	B452036
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B452541
Dissolved Sodium (Na)	mg/L	7.3	27	0.50	B452036
Dissolved Strontium (Sr)	mg/L	0.23	1.6	0.020	B452036
Dissolved Sulphur (S)	mg/L	19	57	0.20	B452036
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B452541
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Uranium (U)	mg/L	0.00083	0.0011	0.00010	B452541
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B452541
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C455364
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU337
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B457234	N/A	2024/07/29	Jill Yuen
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453310	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453304	2024/07/25	2024/07/25	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/25	Automated Statchk
Ammonia-N (Total)	KONE	B452969	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/31	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B457260	N/A	2024/07/29	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU337 Dup
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B457234	N/A	2024/07/29	Jill Yuen

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Bureau Veritas Job #: C455364
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CRU338
Sample ID: AEMP-US-05
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452982	N/A	2024/07/25	Ming Dong
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B453310	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B453304	2024/07/25	2024/07/25	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/25	Automated Statchk
Ammonia-N (Total)	KONE	B452969	N/A	2024/07/25	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/31	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452377	2024/07/25	2024/07/26	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

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GENERAL COMMENTS

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

Package 1	4.7°C

Note: Samples received after hold time
Samples received past hold time for Nitrate/Nitrite and Orthoposphate analysis. Proceeding with the analysis
Notified Alex Haigh via email

Sample CRU337 [AEMP-DS-03] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CRU338 [AEMP-US-05] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B449456	DVN	Method Blank	Turbidity	2024/07/23	<0.10		NTU	
B449830	NJD	Method Blank	Total Sulphide	2024/07/23	<0.0018		mg/L	
B449924	YL7	Method Blank	Orthophosphate (P)	2024/07/23	<0.0030		mg/L	
B450297	TOR	Method Blank	True Colour	2024/07/23	<2.0		PtCo units	
B450322	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/25	<2.0		mg/L	
B450415	TOR	Method Blank	Chloride (Cl)	2024/07/23	<1.0		mg/L	
			Sulphate (SO4)	2024/07/23	<1.0		mg/L	
B450866	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		90	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		85	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B450936	AFI	Method Blank	Nitrite (N)	2024/07/24	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/24	<0.010		mg/L	
B450983	AP1	Method Blank	Chemical Oxygen Demand	2024/07/24	<10		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452036	VSC	Method Blank	Dissolved Iron (Fe)	2024/07/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/07/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/24	<0.30		mg/L	
B452112	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	
B452120	JVM	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452377	DVN	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	
B452399	YL7	Method Blank	Total Nitrogen (N)	2024/07/25	<0.020		mg/L	
B452451	KHU	Method Blank	Total Mercury (Hg)	2024/07/26	<0.0019		ug/L	
B452541	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/25	<0.0030		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452969	AFI	Method Blank	Total Ammonia (N)	2024/07/25	<0.015		mg/L	
B452982	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/07/25	<0.50		mg/L	
B453304	JAB	Method Blank	Total Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Total Uranium (U)	2024/07/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B453310	VSC	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.026		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B454058	HE1	Method Blank	Total Suspended Solids	2024/07/26	<1.0		mg/L	
B454264	JYU	Method Blank	Total Organic Carbon (C)	2024/07/26	<0.50		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B457234	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B457260	JYU	Method Blank	Total Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B450415	TOR	RPD [CRU337-02]	Chloride (Cl)	2024/07/23	0.13		%	20
			Sulphate (SO4)	2024/07/23	0.74		%	20
B457234	JYU	RPD [CRU337-04]	Dissolved Organic Carbon (C)	2024/07/29	1.1		%	20
B450415	TOR	Matrix Spike [CRU337-02]	Chloride (Cl)	2024/07/23		109	%	80 - 120
			Sulphate (SO4)	2024/07/23		94	%	80 - 120
B452451	KHU	Matrix Spike [CRU338-10]	Total Mercury (Hg)	2024/07/26		95	%	80 - 120
B453304	JAB	Matrix Spike [CRU338-05]	Total Aluminum (Al)	2024/07/25		106	%	80 - 120
			Total Chromium (Cr)	2024/07/25		108	%	80 - 120
			Total Cobalt (Co)	2024/07/25		109	%	80 - 120
			Total Copper (Cu)	2024/07/25		105	%	80 - 120
			Total Lead (Pb)	2024/07/25		106	%	80 - 120
			Total Antimony (Sb)	2024/07/25		114	%	80 - 120
			Total Molybdenum (Mo)	2024/07/25		116	%	80 - 120
			Total Nickel (Ni)	2024/07/25		107	%	80 - 120
			Total Selenium (Se)	2024/07/25		106	%	80 - 120
			Total Silver (Ag)	2024/07/25		108	%	80 - 120
			Total Arsenic (As)	2024/07/25		110	%	80 - 120
			Total Thallium (Tl)	2024/07/25		110	%	80 - 120
			Total Tin (Sn)	2024/07/25		115	%	80 - 120
			Total Titanium (Ti)	2024/07/25		117	%	80 - 120
			Total Uranium (U)	2024/07/25		113	%	80 - 120
			Total Vanadium (V)	2024/07/25		112	%	80 - 120
			Total Zinc (Zn)	2024/07/25		104	%	80 - 120
			Total Beryllium (Be)	2024/07/25		113	%	80 - 120
B457234	JYU	Matrix Spike [CRU337-04]	Dissolved Organic Carbon (C)	2024/07/29		96	%	80 - 120
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130
			Pyrene	2024/07/30		90	%	50 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B449456	DVN	LCS	Turbidity	2024/07/23		99	%	80 - 120
B449830	NJD	LCS	Total Sulphide	2024/07/23		100	%	80 - 120
B449924	YL7	LCS	Orthophosphate (P)	2024/07/23		101	%	80 - 120
B450297	TOR	LCS	True Colour	2024/07/23		107	%	80 - 120
B450322	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/25		89	%	70 - 130
B450415	TOR	LCS	Chloride (Cl)	2024/07/23		105	%	80 - 120
			Sulphate (SO4)	2024/07/23		105	%	80 - 120
B450866	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		87	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		88	%	50 - 140
			Benzene	2024/07/24		84	%	60 - 130
			Toluene	2024/07/24		88	%	60 - 130
			Ethylbenzene	2024/07/24		91	%	60 - 130
			m & p-Xylene	2024/07/24		83	%	60 - 130
			o-Xylene	2024/07/24		86	%	60 - 130
			F1 (C6-C10)	2024/07/24		105	%	60 - 140
B450936	AFI	LCS	Nitrite (N)	2024/07/24		104	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/24		108	%	80 - 120
B450983	AP1	LCS	Chemical Oxygen Demand	2024/07/24		101	%	80 - 120
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B452036	VSC	LCS	Dissolved Iron (Fe)	2024/07/24		93	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		93	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		91	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		97	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		88	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		93	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/24		95	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		90	%	80 - 120
			Dissolved Silicon (Si)	2024/07/24		88	%	80 - 120
			Dissolved Boron (B)	2024/07/24		91	%	80 - 120
			Dissolved Calcium (Ca)	2024/07/24		93	%	80 - 120
B452112	JVM	LCS	Alkalinity (Total as CaCO3)	2024/07/25		100	%	80 - 120
B452117	JVM	LCS	pH	2024/07/25		100	%	97 - 103
B452120	JVM	LCS	Conductivity	2024/07/25		101	%	90 - 110
B452377	DVN	LCS	Total Dissolved Solids	2024/07/26		98	%	80 - 120
B452399	YL7	LCS	Total Nitrogen (N)	2024/07/25		105	%	80 - 120
B452451	KHU	LCS	Total Mercury (Hg)	2024/07/26		107	%	80 - 120
B452541	JAB	LCS	Dissolved Aluminum (Al)	2024/07/25		103	%	80 - 120

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			Dissolved Chromium (Cr)	2024/07/25		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		104	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		103	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		104	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		98	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		100	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		106	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B452969	AFI	LCS	Total Ammonia (N)	2024/07/25		102	%	80 - 120
B452982	MDO	LCS	Dissolved Organic Carbon (C)	2024/07/25		104	%	80 - 120
B453304	JAB	LCS	Total Aluminum (Al)	2024/07/25		109	%	80 - 120
			Total Chromium (Cr)	2024/07/25		107	%	80 - 120
			Total Cobalt (Co)	2024/07/25		109	%	80 - 120
			Total Copper (Cu)	2024/07/25		107	%	80 - 120
			Total Lead (Pb)	2024/07/25		105	%	80 - 120
			Total Antimony (Sb)	2024/07/25		109	%	80 - 120
			Total Molybdenum (Mo)	2024/07/25		109	%	80 - 120
			Total Nickel (Ni)	2024/07/25		108	%	80 - 120
			Total Selenium (Se)	2024/07/25		104	%	80 - 120
			Total Silver (Ag)	2024/07/25		109	%	80 - 120
			Total Arsenic (As)	2024/07/25		107	%	80 - 120
			Total Thallium (Tl)	2024/07/25		108	%	80 - 120
			Total Tin (Sn)	2024/07/25		111	%	80 - 120
			Total Titanium (Ti)	2024/07/25		109	%	80 - 120
			Total Uranium (U)	2024/07/25		111	%	80 - 120
			Total Vanadium (V)	2024/07/25		108	%	80 - 120
			Total Zinc (Zn)	2024/07/25		105	%	80 - 120
			Total Beryllium (Be)	2024/07/25		111	%	80 - 120
B453310	VSC	LCS	Total Iron (Fe)	2024/07/25		94	%	80 - 120
			Total Lithium (Li)	2024/07/25		98	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		102	%	80 - 120
			Total Manganese (Mn)	2024/07/25		90	%	80 - 120
			Total Potassium (K)	2024/07/25		97	%	80 - 120
			Total Sodium (Na)	2024/07/25		94	%	80 - 120
			Total Strontium (Sr)	2024/07/25		102	%	80 - 120
			Total Sulphur (S)	2024/07/25		92	%	80 - 120
			Total Phosphorus (P)	2024/07/25		94	%	80 - 120
			Total Barium (Ba)	2024/07/25		102	%	80 - 120
			Total Silicon (Si)	2024/07/25		89	%	80 - 120
			Total Boron (B)	2024/07/25		95	%	80 - 120
			Total Calcium (Ca)	2024/07/25		97	%	80 - 120
B454058	HE1	LCS	Total Suspended Solids	2024/07/26		103	%	80 - 120
B454264	JYU	LCS	Total Organic Carbon (C)	2024/07/26		100	%	80 - 120

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B457234	JYU	LCS	Dissolved Organic Carbon (C)	2024/07/29		99	%	80 - 120
B457260	JYU	LCS	Total Organic Carbon (C)	2024/07/29		100	%	80 - 120
B452399	YL7	SRM	Total Nitrogen (N)	2024/07/25		104	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

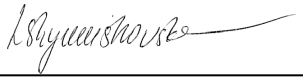
Bureau Veritas Job #: C455364
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Qiliang (Alex) Wu, Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

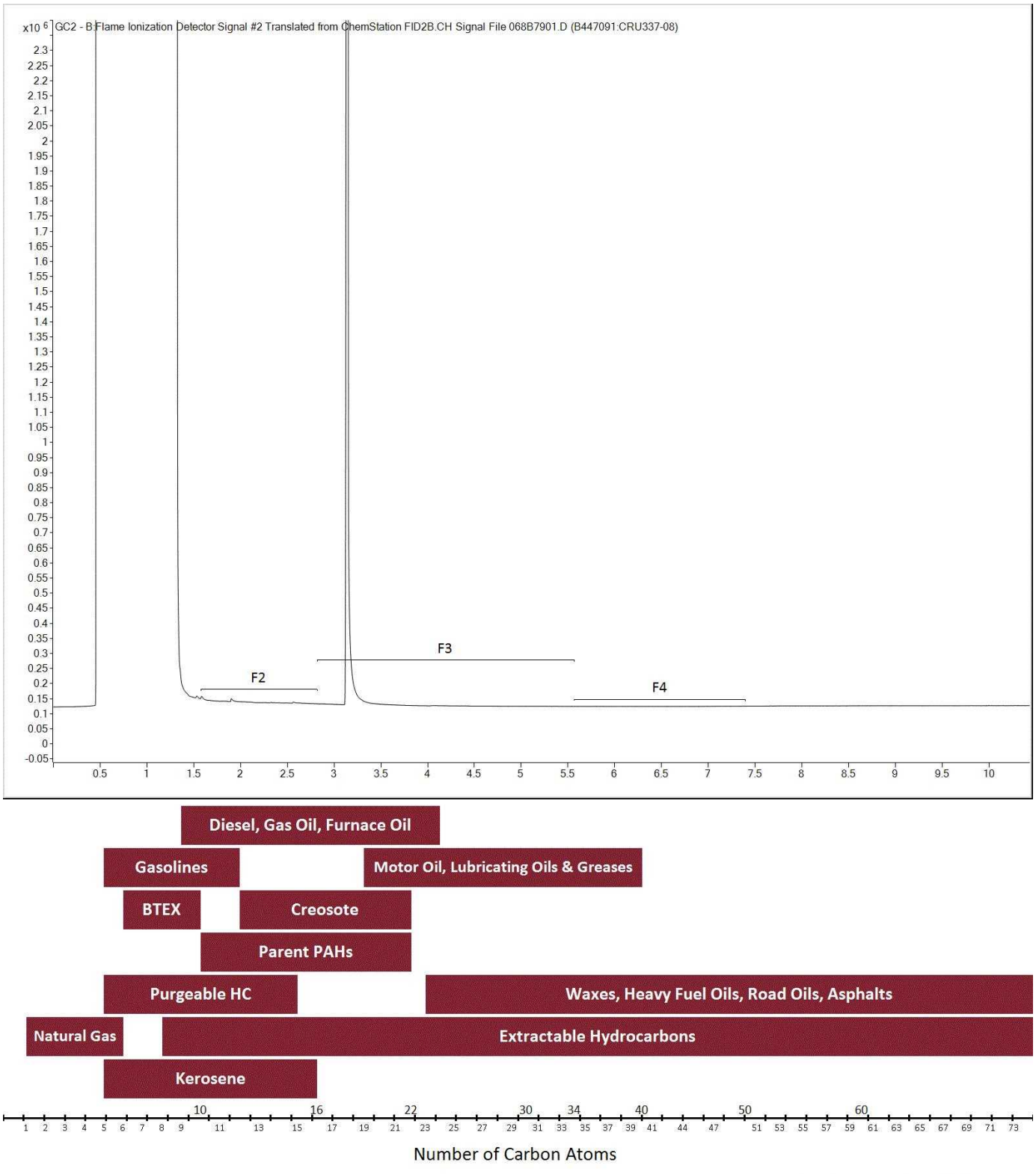
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455364
Report Date: 2024/08/06
Bureau Veritas Sample: CRU337

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-03

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



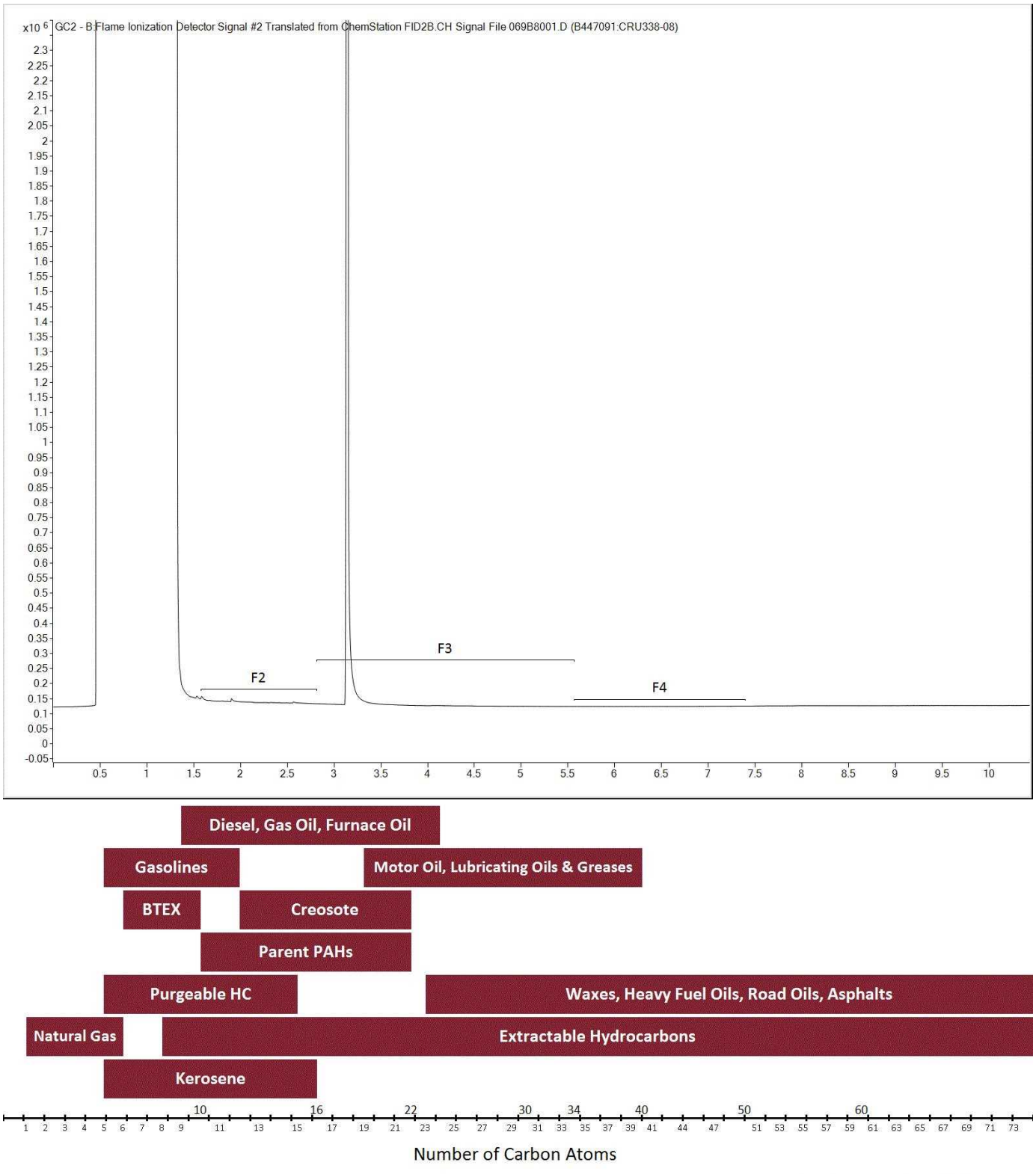
hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Bureau Veritas Job #: C455364
Report Date: 2024/08/06
Bureau Veritas Sample: CRU338

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-05

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292207

INVOICE INFORMATION

Company Name: ☒ Imperial Oil ☐ ExxonMobil
Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com
Ph: 587 897 6249
Sampler Name (Print): STACY GIBB / TINO NGULUBE

REPORT INFORMATION

Company Name: Worley
Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com
Ph: 587 897 6249
Consultant Project #: 417085-54419-24200

ANALYSIS REQUESTED

#	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☐ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	oil and grease	Tot. Dec. Sulphides	Nitrate, Nitrite, Ammonia (Total) TKN	orthophosphate	Sulphur - total & dissolved	COD	Alkylated PAH, TPH
1	AEMP-DS-03		X			18	2024/07/19	12:18	X			X	X							X	X					X			X		X	X	X	X	X	X
2	AEMP-US-05		X			18	2024/07/19	12:18	X			X	X							X	X					X			X		X	X	X	X	X	X
3																																						
4																																						
5																																						
6																																						
7																																						
8																																						
9																																						
10																																						

med2-2024-07-689

IOL SITE LOCATION: Norman Wells, NT
IOL PROJECT # (if applicable): NA
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com cacal-IRdatatrack@worley.com Stacy.gibb@worley.com IES A26014936

JARS USED & NOT SUBMITTED Enter N/A for Water: NA

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	6	5 (2)	3 (3)
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

MCAL

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	2 (1)	2 (2)	3 (3)
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	(1)	(2)	(3)
SEAL INTACT						
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # L455364.

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/07/21	10:30	1.	BRENTON MAH	2024/07/22	13:17
2.	Kyle Van Thournout	2024/07/22	1800	2.	NAUDEEP GILL	2024/07/23	07:00
3.				3.			

SAMPLES
LABELED BY: EPL
VERIFIED BY: SEZ

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419
Your C.O.C. #: 292203

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537516
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455387
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419
Your C.O.C. #: 292203

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537516
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455387
Received: 2024/07/22, 13:17

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) Alkylated PAH results are semiquantitative

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419
Your C.O.C. #: 292203

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/06
Report #: R3537516
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C455387

Received: 2024/07/22, 13:17

(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
06 Aug 2024 11:14:47

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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Bureau Veritas Job #: C455387
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CRU555	CRU556		
Sampling Date		2024/07/19 11:36	2024/07/19 11:36		
COC Number		292203	292203		
	UNITS	**AEMP-DS-09**	**AEMP-US-03**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B447091
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B450866
Toluene	mg/L	<0.00040	<0.00040	0.00040	B450866
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B450866
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B450866
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B450866
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B448620
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B448620
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B450866
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	97	97		B447091
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	99	94		B450866
4-Bromofluorobenzene (sur.)	%	110	112		B450866
D4-1,2-Dichloroethane (sur.)	%	93	86		B450866
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CRU555	CRU556		
Sampling Date		2024/07/19 11:36	2024/07/19 11:36		
COC Number		292203	292203		
	UNITS	**AEMP-DS-09**	**AEMP-US-03**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	<0.20	0.20	B448825
Nutrients					
Total Nitrogen (N)	mg/L	<0.20 (1)	0.21 (2)	0.20	B452399

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU555		CRU556		
Sampling Date		2024/07/19 11:36		2024/07/19 11:36		
COC Number		292203		292203		
	UNITS	**AEMP-DS-09**	**QC Batch**	**AEMP-US-03**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	0.000073	B449080	0.00023	0.000020	B449080
Total Mercury (Hg)	ug/L	0.014 (1)	B452451	0.014 (1)	0.0095	B452451
Total Aluminum (Al)	mg/L	1.5	B452741	4.3	0.0030	B452558
Total Antimony (Sb)	mg/L	<0.00060	B452741	<0.00060	0.00060	B452558
Total Arsenic (As)	mg/L	0.0016	B452741	0.0043	0.00020	B452558
Total Barium (Ba)	mg/L	0.079	B452744	0.13	0.010	B452573
Total Beryllium (Be)	mg/L	<0.0010	B452741	<0.0010	0.0010	B452558
Total Boron (B)	mg/L	<0.020	B452744	0.022	0.020	B452573
Total Calcium (Ca)	mg/L	39	B452744	38	0.30	B452573
Total Chromium (Cr)	mg/L	0.0025	B452741	0.0068	0.0010	B452558
Total Cobalt (Co)	mg/L	0.0012	B452741	0.0044	0.00030	B452558
Total Copper (Cu)	mg/L	0.0036	B452741	0.0091	0.0010	B452558
Total Iron (Fe)	mg/L	2.7	B452744	8.8	0.060	B452573
Total Lead (Pb)	mg/L	0.0013	B452741	0.0046	0.00020	B452558
Total Lithium (Li)	mg/L	<0.020	B452744	<0.020	0.020	B452573
Total Magnesium (Mg)	mg/L	11	B452744	11	0.20	B452573
Total Manganese (Mn)	mg/L	0.033	B452744	0.14	0.0040	B452573
Total Molybdenum (Mo)	mg/L	0.0011	B452741	0.0017	0.00020	B452558
Total Nickel (Ni)	mg/L	0.0060	B452741	0.014	0.00050	B452558
Total Phosphorus (P)	mg/L	<0.10	B452744	0.17	0.10	B452573
Total Potassium (K)	mg/L	1.4	B452744	1.9	0.30	B452573
Total Selenium (Se)	mg/L	0.00046	B452741	0.00060	0.00020	B452558
Total Silicon (Si)	mg/L	3.3	B452744	6.4	0.50	B452573
Total Silver (Ag)	mg/L	<0.00010	B452741	<0.00010	0.00010	B452558
Total Sodium (Na)	mg/L	6.9	B452744	7.3	0.50	B452573
Total Strontium (Sr)	mg/L	0.24	B452744	0.22	0.020	B452573
Total Sulphur (S)	mg/L	16	B452744	14	0.20	B452573
Total Thallium (Tl)	mg/L	<0.00020	B452741	<0.00020	0.00020	B452558
Total Tin (Sn)	mg/L	<0.0010	B452741	<0.0010	0.0010	B452558

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CRU555		CRU556		
Sampling Date		2024/07/19 11:36		2024/07/19 11:36		
COC Number		292203		292203		
	UNITS	**AEMP-DS-09**	**QC Batch**	**AEMP-US-03**	**RDL**	**QC Batch**
Total Titanium (Ti)	mg/L	0.031	B452741	0.038	0.0010	B452558
Total Uranium (U)	mg/L	0.00091	B452741	0.0011	0.00010	B452558
Total Vanadium (V)	mg/L	0.0049	B452741	0.013	0.0010	B452558
Total Zinc (Zn)	mg/L	0.039	B452741	0.058	0.0030	B452558
RDL = Reportable Detection Limit						

Bureau Veritas Job #: C455387
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU555			CRU556			CRU556		
Sampling Date		2024/07/19 11:36			2024/07/19 11:36			2024/07/19 11:36		
COC Number		292203			292203			292203		
	UNITS	**AEMP-DS-09**	**RDL**	**QC Batch**	**AEMP-US-03**	**RDL**	**QC Batch**	**AEMP-US-03 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	140	0.50	B448621	120	0.50	B448621			
Ion Balance (% Difference)	%	1.6	N/A	B448624	2.3	N/A	B448624			
Nitrate (N)	mg/L	0.075	0.010	B448622	0.094	0.010	B448622			
Nitrate (NO3)	mg/L	0.33	0.044	B448626	0.42	0.044	B448626			
Nitrite (NO2)	mg/L	<0.033	0.033	B448626	<0.033	0.033	B448626			
Sulphide (as H2S)	mg/L	0.035	0.0020	B449088	0.033	0.0020	B449088			
Demand Parameters										
Chemical Oxygen Demand	mg/L	12	10	B450983	13	10	B450983			
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B448623	<0.000020	0.000020	B448623			
Misc. Inorganics										
Conductivity	uS/cm	320	2.0	B452120	280	2.0	B452120			
Dissolved Organic Carbon (C)	mg/L	4.4	0.50	B457234	3.8	0.50	B452982			
pH	pH	7.97	N/A	B452117	7.78	N/A	B452117			
Total Organic Carbon (C)	mg/L	3.4	0.50	B457260	2.9	0.50	B454264			
Total Dissolved Solids	mg/L	180	10	B452378	160	10	B452378			
Total Suspended Solids	mg/L	110	1.0	B454058	370 (1)	1.9	B454058			
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B452112	<1.0	1.0	B452112			
Alkalinity (Total as CaCO3)	mg/L	95	1.0	B452112	88	1.0	B452112			
Bicarbonate (HCO3)	mg/L	120	1.0	B452112	110	1.0	B452112			
Carbonate (CO3)	mg/L	<1.0	1.0	B452112	<1.0	1.0	B452112			
Hydroxide (OH)	mg/L	<1.0	1.0	B452112	<1.0	1.0	B452112			
Total Sulphide	mg/L	0.033	0.0018	B449830	0.031	0.0018	B449830			
Chloride (Cl)	mg/L	7.1	1.0	B450415	8.2	1.0	B450415			
Sulphate (SO4)	mg/L	57	1.0	B450415	45	1.0	B450415			
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B451335	<0.015	0.015	B451335			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Detection limit raised based on sample volume used for analysis.

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Bureau Veritas Job #: C455387
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CRU555			CRU556			CRU556		
Sampling Date		2024/07/19 11:36			2024/07/19 11:36			2024/07/19 11:36		
COC Number		292203			292203			292203		
	UNITS	**AEMP-DS-09**	**RDL**	**QC Batch**	**AEMP-US-03**	**RDL**	**QC Batch**	**AEMP-US-03 Lab-Dup**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B449924	<0.0030	0.0030	B449924			
Nitrite (N)	mg/L	<0.010	0.010	B450936	<0.010	0.010	B450936			
Nitrate plus Nitrite (N)	mg/L	0.075	0.010	B450936	0.094	0.010	B450936			
Misc. Organics										
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B450322	<2.0	2.0	B450322	<2.0	2.0	B450322
Physical Properties										
True Colour	PtCo units	7.9	2.0	B450297	9.4	2.0	B450297			
Physical Properties										
Turbidity	NTU	150	0.10	B449456	270	0.10	B449456			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU555	CRU556		
Sampling Date		2024/07/19 11:36	2024/07/19 11:36		
COC Number		292203	292203		
	UNITS	**AEMP-DS-09**	**AEMP-US-03**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B449091
Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B445873
Acridine	ug/L	<0.040	<0.040	0.040	B445873
Anthracene	ug/L	<0.010	<0.010	0.010	B445873
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B445873
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B445873
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B445873
Fluoranthene	ug/L	<0.010	<0.010	0.010	B445873
Fluorene	ug/L	<0.050	<0.050	0.050	B445873
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B445873
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B445873
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Phenanthrene	ug/L	<0.050	<0.050	0.050	B445873
Perylene	ug/L	<0.050	<0.050	0.050	B445873
Pyrene	ug/L	<0.020	<0.020	0.020	B445873
Quinoline	ug/L	<0.20	<0.20	0.20	B445873
Retene	ug/L	<0.050	<0.050	0.050	B445873
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B445873
Biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CRU555	CRU556		
Sampling Date		2024/07/19 11:36	2024/07/19 11:36		
COC Number		292203	292203		
	UNITS	**AEMP-DS-09**	**AEMP-US-03**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B445873
C1-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C2-fluorene	ug/L	<0.050	<0.050	0.050	B445873
C3-fluorene	ug/L	<0.050	<0.050	0.050	B445873
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B445873
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B445873
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B445873
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B445873
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B445873
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B445873
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B445873
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	108	107		B445873
D8-ACENAPHTHYLENE (sur.)	%	99	100		B445873
D8-NAPHTHALENE (sur.)	%	91	89		B445873
TERPHENYL-D14 (sur.)	%	115	115		B445873
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CRU555	CRU556		
Sampling Date		2024/07/19 11:36	2024/07/19 11:36		
COC Number		292203	292203		
	UNITS	**AEMP-DS-09**	**AEMP-US-03**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B451604
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CRU555	CRU556		
Sampling Date		2024/07/19 11:36	2024/07/19 11:36		
COC Number		292203	292203		
	UNITS	**AEMP-DS-09**	**AEMP-US-03**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.040	0.038	0.0030	B452541
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B452541
Dissolved Arsenic (As)	mg/L	0.00028	0.00032	0.00020	B452541
Dissolved Barium (Ba)	mg/L	0.051	0.046	0.010	B452036
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B452036
Dissolved Calcium (Ca)	mg/L	39	33	0.30	B452036
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B452541
Dissolved Copper (Cu)	mg/L	0.0011	0.0011	0.0010	B452541
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B452036
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B452541
Dissolved Lithium (Li)	mg/L	0.030	0.034	0.020	B452036
Dissolved Magnesium (Mg)	mg/L	11	9.6	0.20	B452036
Dissolved Manganese (Mn)	mg/L	<0.0040	<0.0040	0.0040	B452036
Dissolved Molybdenum (Mo)	mg/L	0.00098	0.00084	0.00020	B452541
Dissolved Nickel (Ni)	mg/L	0.00097	0.00094	0.00050	B452541
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B452036
Dissolved Potassium (K)	mg/L	0.94	1.0	0.30	B452036
Dissolved Selenium (Se)	mg/L	0.00043	0.00037	0.00020	B452541
Dissolved Silicon (Si)	mg/L	1.6	1.4	0.50	B452036
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B452541
Dissolved Sodium (Na)	mg/L	7.3	7.8	0.50	B452036
Dissolved Strontium (Sr)	mg/L	0.23	0.21	0.020	B452036
Dissolved Sulphur (S)	mg/L	19	14	0.20	B452036
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B452541
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Uranium (U)	mg/L	0.00086	0.00074	0.00010	B452541
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B452541
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B452541
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C455387
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CRU555
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B457234	N/A	2024/07/29	Jill Yuen
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B452744	2024/07/25	2024/07/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B452741	2024/07/25	2024/07/26	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/26	Automated Statchk
Ammonia-N (Total)	KONE	B451335	N/A	2024/07/24	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/31	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452378	2024/07/25	2024/07/26	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B457260	N/A	2024/07/29	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU556
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B452112	N/A	2024/07/25	Jeanette Chavol Melo
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B450866	N/A	2024/07/24	Richard Ly

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Bureau Veritas Job #: C455387
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CRU556
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
F1-BTEX	CALC/MS	B448620	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B448623	N/A	2024/07/25	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B449080	N/A	2024/07/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B450415	N/A	2024/07/23	Tyler Orr
COD by Colorimeter	M/PROB	B450983	N/A	2024/07/24	Amy Phan
True Colour	SPEC/COL	B450297	N/A	2024/07/23	Tyler Orr
Carbon (DOC)	TECH	B452982	N/A	2024/07/25	Ming Dong
Conductivity @25C	COND	B452120	N/A	2024/07/25	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B447091	2024/07/25	2024/07/26	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B449088	N/A	2024/07/23	Automated Statchk
Hardness	CALC	B448621	N/A	2024/07/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B451604	2024/07/24	2024/07/24	Kevin Hung
Mercury (Total) by CV	CV	B452451	2024/07/25	2024/07/26	Kevin Hung
Elements by ICP - Dissolved	ICPA	B452036	N/A	2024/07/24	Vincy Scaria
Elements by ICP - Total	ICPA	B452573	2024/07/25	2024/07/25	Hue Quyen Vuong
Elements by ICPMS - Dissolved	ICPM	B452541	N/A	2024/07/25	Jason Bao
Elements by ICPMS - Total	ICPM	B452558	2024/07/25	2024/07/26	Jason Bao
Ion Balance	CALC	B448624	N/A	2024/07/25	Automated Statchk
Ammonia-N (Total)	KONE	B451335	N/A	2024/07/24	Adam Fishleigh
Nitrate and Nitrite	CALC	B448626	N/A	2024/07/25	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B450936	N/A	2024/07/24	Adam Fishleigh
Nitrate (as N)	CALC	B448622	2024/07/25	2024/07/25	Automated Statchk
Target & Alkylated PAH in Water by GC/MS	GC/MS	B445873	2024/07/25	2024/07/31	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B449091	N/A	2024/07/31	Automated Statchk
pH @25°C	AT/ALK	B452117	N/A	2024/07/25	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B449924	N/A	2024/07/23	Yan Lin
Total Sulphide	SPEC	B449830	N/A	2024/07/23	Naitik Jigneshbhai Desai
Total Dissolved Solids (Filt. Residue)	BAL	B452378	2024/07/25	2024/07/26	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B448825	N/A	2024/07/25	Automated Statchk
Nitrogen (Total)	AC/COL	B452399	2024/07/25	2024/07/25	Yan Lin
Carbon (Total Organic)	TECH	B454264	N/A	2024/07/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B454058	2024/07/26	2024/07/26	Haydee Estilong
Turbidity	TURB	B449456	N/A	2024/07/23	Daryl Viktoria Noval

Bureau Veritas ID: CRU556 Dup
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/07/19
Relinquished: 2024/07/21
Received: 2024/07/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hydrocarbon by IR (Mineral oil & grease)	IR	B450322	2024/07/24	2024/07/25	Ramandeep Ramandeep

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GENERAL COMMENTS

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

Package 1	4.3°C

Sample CRU555 [AEMP-DS-09] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CRU556 [AEMP-US-03] : Sample was analyzed past method specified hold time for Orthophosphate by Automated Analyzer. 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 Turbidity. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

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Bureau Veritas Job #: C455387
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B445873	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/07/30		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		99	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		84	%	50 - 130
			Acenaphthene	2024/07/30	<0.10		ug/L	
			Acenaphthylene	2024/07/30	<0.10		ug/L	
			Acridine	2024/07/30	<0.040		ug/L	
			Anthracene	2024/07/30	<0.010		ug/L	
			Benzo(a)anthracene	2024/07/30	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/07/30	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/07/30	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/07/30	<0.050		ug/L	
			Benzo(a)pyrene	2024/07/30	<0.0075		ug/L	
			Benzo(e)pyrene	2024/07/30	<0.050		ug/L	
			Chrysene	2024/07/30	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/07/30	<0.0075		ug/L	
			Fluoranthene	2024/07/30	<0.010		ug/L	
			Fluorene	2024/07/30	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/07/30	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/07/30	<0.0085		ug/L	
			2-Methylnaphthalene	2024/07/30	<0.10		ug/L	
			Naphthalene	2024/07/30	<0.10		ug/L	
			Phenanthrene	2024/07/30	<0.050		ug/L	
			Perylene	2024/07/30	<0.050		ug/L	
			Pyrene	2024/07/30	<0.020		ug/L	
			Quinoline	2024/07/30	<0.20		ug/L	
			Retene	2024/07/30	<0.050		ug/L	
			C1-Naphthalene	2024/07/30	<0.10		ug/L	
			C3-Naphthalene	2024/07/30	<0.10		ug/L	
			C4-Naphthalene	2024/07/30	<0.10		ug/L	
			C2-Naphthalene	2024/07/30	<0.10		ug/L	
			Biphenyl	2024/07/30	<0.020		ug/L	
			C1-biphenyl	2024/07/30	<0.020		ug/L	
			C2-biphenyl	2024/07/30	<0.020		ug/L	
			C1-fluorene	2024/07/30	<0.050		ug/L	
			C2-fluorene	2024/07/30	<0.050		ug/L	
			C3-fluorene	2024/07/30	<0.050		ug/L	
			Dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C2-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C3-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C4-dibenzothiophene	2024/07/30	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/07/30	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/07/30	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/07/30	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/07/30	<0.0075		ug/L	
			C1-Acenaphthene	2024/07/30	<0.10		ug/L	
			1-Methylnaphthalene	2024/07/30	<0.10		ug/L	
B447091	CHA	Method Blank	O-TERPHENYL (sur.)	2024/07/26		98	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26	<0.10		mg/L	
B449456	DVN	Method Blank	Turbidity	2024/07/23	<0.10		NTU	
B449830	NJD	Method Blank	Total Sulphide	2024/07/23	<0.0018		mg/L	
B449924	YL7	Method Blank	Orthophosphate (P)	2024/07/23	<0.0030		mg/L	
B450297	TOR	Method Blank	True Colour	2024/07/23	<2.0		PtCo units	
B450322	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/07/25	<2.0		mg/L	
B450415	TOR	Method Blank	Chloride (Cl)	2024/07/23	<1.0		mg/L	
			Sulphate (SO4)	2024/07/23	<1.0		mg/L	
B450866	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/07/24		90	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		85	%	50 - 140
			Benzene	2024/07/24	<0.00040		mg/L	
			Toluene	2024/07/24	<0.00040		mg/L	
			Ethylbenzene	2024/07/24	<0.00040		mg/L	
			m & p-Xylene	2024/07/24	<0.00080		mg/L	
			o-Xylene	2024/07/24	<0.00040		mg/L	
			F1 (C6-C10)	2024/07/24	<0.10		mg/L	
B450936	AFI	Method Blank	Nitrite (N)	2024/07/24	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/07/24	<0.010		mg/L	
B450983	AP1	Method Blank	Chemical Oxygen Demand	2024/07/24	<10		mg/L	
B451335	AFI	Method Blank	Total Ammonia (N)	2024/07/24	<0.015		mg/L	
B451604	KHU	Method Blank	Dissolved Mercury (Hg)	2024/07/24	<0.0019		ug/L	
B452036	VSC	Method Blank	Dissolved Iron (Fe)	2024/07/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/07/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/07/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/07/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/07/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/07/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/07/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/07/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/07/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/07/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/07/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/07/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/07/24	<0.30		mg/L	
B452112	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/07/25	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/07/25	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/07/25	<1.0		mg/L	
			Carbonate (CO3)	2024/07/25	<1.0		mg/L	
			Hydroxide (OH)	2024/07/25	<1.0		mg/L	
B452120	JVM	Method Blank	Conductivity	2024/07/25	<2.0		uS/cm	
B452378	TNY	Method Blank	Total Dissolved Solids	2024/07/26	<10		mg/L	
B452399	YL7	Method Blank	Total Nitrogen (N)	2024/07/25	<0.020		mg/L	
B452451	KHU	Method Blank	Total Mercury (Hg)	2024/07/26	<0.0019		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B452541	JAB	Method Blank	Dissolved Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/07/25	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/07/25	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452558	JAB	Method Blank	Total Aluminum (Al)	2024/07/26	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/26	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/26	<0.00030		mg/L	
			Total Copper (Cu)	2024/07/26	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/26	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/26	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/26	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/26	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/26	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/26	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/26	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/26	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/26	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/26	<0.0010		mg/L	
			Total Uranium (U)	2024/07/26	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/26	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/26	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/26	<0.0010		mg/L	
B452573	HQV	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B452741	JAB	Method Blank	Total Aluminum (Al)	2024/07/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/07/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/07/25	<0.00030		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Copper (Cu)	2024/07/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/07/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/07/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/07/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/07/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/07/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/07/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/07/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/07/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/07/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/07/25	<0.0010		mg/L	
			Total Uranium (U)	2024/07/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/07/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/07/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/07/25	<0.0010		mg/L	
B452744	VSC	Method Blank	Total Iron (Fe)	2024/07/25	<0.060		mg/L	
			Total Lithium (Li)	2024/07/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/07/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/07/25	<0.0040		mg/L	
			Total Potassium (K)	2024/07/25	<0.30		mg/L	
			Total Sodium (Na)	2024/07/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/07/25	<0.020		mg/L	
			Total Sulphur (S)	2024/07/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/07/25	<0.10		mg/L	
			Total Barium (Ba)	2024/07/25	<0.010		mg/L	
			Total Silicon (Si)	2024/07/25	<0.50		mg/L	
			Total Boron (B)	2024/07/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/07/25	<0.30		mg/L	
B452982	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/07/25	<0.50		mg/L	
B454058	HE1	Method Blank	Total Suspended Solids	2024/07/26	<1.0		mg/L	
B454264	JYU	Method Blank	Total Organic Carbon (C)	2024/07/26	<0.50		mg/L	
B457234	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B457260	JYU	Method Blank	Total Organic Carbon (C)	2024/07/29	<0.50		mg/L	
B450322	RRA	RPD [CRU556-09]	Total Petroleum Hydrocarbon	2024/07/25	NC		%	30
B445873	DM	LCS	D10-ANTHRACENE (sur.)	2024/07/30		113	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/07/30		115	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/07/30		105	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/07/30		96	%	50 - 130
			Acenaphthene	2024/07/30		84	%	50 - 130
			Acenaphthylene	2024/07/30		85	%	50 - 130
			Acridine	2024/07/30		94	%	50 - 130
			Anthracene	2024/07/30		79	%	50 - 130
			Benzo(a)anthracene	2024/07/30		94	%	50 - 130
			Benzo(b&j)fluoranthene	2024/07/30		99	%	50 - 130
			Benzo(k)fluoranthene	2024/07/30		110	%	50 - 130
			Benzo(g,h,i)perylene	2024/07/30		99	%	50 - 130
			Benzo(c)phenanthrene	2024/07/30		92	%	50 - 130
			Benzo(a)pyrene	2024/07/30		100	%	50 - 130
			Benzo(e)pyrene	2024/07/30		86	%	50 - 130
			Chrysene	2024/07/30		97	%	50 - 130
			Dibenz(a,h)anthracene	2024/07/30		108	%	50 - 130
			Fluoranthene	2024/07/30		89	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Fluorene	2024/07/30		91	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/07/30		99	%	50 - 130
			2-Methylnaphthalene	2024/07/30		73	%	50 - 130
			Naphthalene	2024/07/30		76	%	50 - 130
			Phenanthrene	2024/07/30		102	%	50 - 130
			Perylene	2024/07/30		88	%	50 - 130
			Pyrene	2024/07/30		90	%	50 - 130
			Quinoline	2024/07/30		88	%	50 - 130
			C1-Naphthalene	2024/07/30		65	%	50 - 130
			C3-Naphthalene	2024/07/30		84	%	50 - 130
			C2-Naphthalene	2024/07/30		77	%	50 - 130
			C1-biphenyl	2024/07/30		75	%	50 - 130
			C1 phenanthrene/anthracene	2024/07/30		96	%	50 - 130
			C2 phenanthrene/anthracene	2024/07/30		86	%	50 - 130
			C1 fluoranthene/pyrene	2024/07/30		88	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/07/30		76	%	30 - 130
			1-Methylnaphthalene	2024/07/30		65	%	50 - 130
B447091	CHA	LCS	O-TERPHENYL (sur.)	2024/07/26		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/07/26		91	%	60 - 140
B449456	DVN	LCS	Turbidity	2024/07/23		99	%	80 - 120
B449830	NJD	LCS	Total Sulphide	2024/07/23		100	%	80 - 120
B449924	YL7	LCS	Orthophosphate (P)	2024/07/23		101	%	80 - 120
B450297	TOR	LCS	True Colour	2024/07/23		107	%	80 - 120
B450322	RRA	LCS	Total Petroleum Hydrocarbon	2024/07/25		89	%	70 - 130
B450415	TOR	LCS	Chloride (Cl)	2024/07/23		105	%	80 - 120
			Sulphate (SO4)	2024/07/23		105	%	80 - 120
B450866	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/07/24		87	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/07/24		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/07/24		88	%	50 - 140
			Benzene	2024/07/24		84	%	60 - 130
			Toluene	2024/07/24		88	%	60 - 130
			Ethylbenzene	2024/07/24		91	%	60 - 130
			m & p-Xylene	2024/07/24		83	%	60 - 130
			o-Xylene	2024/07/24		86	%	60 - 130
			F1 (C6-C10)	2024/07/24		105	%	60 - 140
B450936	AFI	LCS	Nitrite (N)	2024/07/24		104	%	80 - 120
			Nitrate plus Nitrite (N)	2024/07/24		108	%	80 - 120
B450983	AP1	LCS	Chemical Oxygen Demand	2024/07/24		101	%	80 - 120
B451335	AFI	LCS	Total Ammonia (N)	2024/07/24		103	%	80 - 120
B451604	KHU	LCS	Dissolved Mercury (Hg)	2024/07/24		100	%	80 - 120
B452036	VSC	LCS	Dissolved Iron (Fe)	2024/07/24		93	%	80 - 120
			Dissolved Lithium (Li)	2024/07/24		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/07/24		93	%	80 - 120
			Dissolved Manganese (Mn)	2024/07/24		91	%	80 - 120
			Dissolved Potassium (K)	2024/07/24		97	%	80 - 120
			Dissolved Sodium (Na)	2024/07/24		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/07/24		88	%	80 - 120
			Dissolved Sulphur (S)	2024/07/24		93	%	80 - 120
			Dissolved Phosphorus (P)	2024/07/24		95	%	80 - 120
			Dissolved Barium (Ba)	2024/07/24		90	%	80 - 120
			Dissolved Silicon (Si)	2024/07/24		88	%	80 - 120
			Dissolved Boron (B)	2024/07/24		91	%	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 Calcium (Ca)	2024/07/24		93	%	80 - 120
B452112	JVM	LCS	Alkalinity (Total as CaCO3)	2024/07/25		100	%	80 - 120
B452117	JVM	LCS	pH	2024/07/25		100	%	97 - 103
B452120	JVM	LCS	Conductivity	2024/07/25		101	%	90 - 110
B452378	TNY	LCS	Total Dissolved Solids	2024/07/26		102	%	80 - 120
B452399	YL7	LCS	Total Nitrogen (N)	2024/07/25		105	%	80 - 120
B452451	KHU	LCS	Total Mercury (Hg)	2024/07/26		107	%	80 - 120
B452541	JAB	LCS	Dissolved Aluminum (Al)	2024/07/25		103	%	80 - 120
			Dissolved Chromium (Cr)	2024/07/25		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/07/25		104	%	80 - 120
			Dissolved Copper (Cu)	2024/07/25		103	%	80 - 120
			Dissolved Lead (Pb)	2024/07/25		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/07/25		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/07/25		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/07/25		104	%	80 - 120
			Dissolved Selenium (Se)	2024/07/25		98	%	80 - 120
			Dissolved Silver (Ag)	2024/07/25		99	%	80 - 120
			Dissolved Arsenic (As)	2024/07/25		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/07/25		100	%	80 - 120
			Dissolved Tin (Sn)	2024/07/25		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/07/25		106	%	80 - 120
			Dissolved Uranium (U)	2024/07/25		99	%	80 - 120
			Dissolved Vanadium (V)	2024/07/25		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/07/25		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/07/25		97	%	80 - 120
B452558	JAB	LCS	Total Aluminum (Al)	2024/07/26		101	%	80 - 120
			Total Chromium (Cr)	2024/07/26		99	%	80 - 120
			Total Cobalt (Co)	2024/07/26		99	%	80 - 120
			Total Copper (Cu)	2024/07/26		99	%	80 - 120
			Total Lead (Pb)	2024/07/26		100	%	80 - 120
			Total Antimony (Sb)	2024/07/26		103	%	80 - 120
			Total Molybdenum (Mo)	2024/07/26		101	%	80 - 120
			Total Nickel (Ni)	2024/07/26		100	%	80 - 120
			Total Selenium (Se)	2024/07/26		101	%	80 - 120
			Total Silver (Ag)	2024/07/26		99	%	80 - 120
			Total Arsenic (As)	2024/07/26		101	%	80 - 120
			Total Thallium (Tl)	2024/07/26		102	%	80 - 120
			Total Tin (Sn)	2024/07/26		97	%	80 - 120
			Total Titanium (Ti)	2024/07/26		96	%	80 - 120
			Total Uranium (U)	2024/07/26		102	%	80 - 120
			Total Vanadium (V)	2024/07/26		100	%	80 - 120
			Total Zinc (Zn)	2024/07/26		98	%	80 - 120
			Total Beryllium (Be)	2024/07/26		99	%	80 - 120
B452573	HQV	LCS	Total Iron (Fe)	2024/07/25		98	%	80 - 120
			Total Lithium (Li)	2024/07/25		89	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		91	%	80 - 120
			Total Manganese (Mn)	2024/07/25		91	%	80 - 120
			Total Potassium (K)	2024/07/25		90	%	80 - 120
			Total Sodium (Na)	2024/07/25		93	%	80 - 120
			Total Strontium (Sr)	2024/07/25		89	%	80 - 120
			Total Sulphur (S)	2024/07/25		97	%	80 - 120
			Total Phosphorus (P)	2024/07/25		96	%	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
			Total Barium (Ba)	2024/07/25		91	%	80 - 120
			Total Silicon (Si)	2024/07/25		97	%	80 - 120
			Total Boron (B)	2024/07/25		94	%	80 - 120
			Total Calcium (Ca)	2024/07/25		88	%	80 - 120
B452741	JAB	LCS	Total Aluminum (Al)	2024/07/25		95	%	80 - 120
			Total Chromium (Cr)	2024/07/25		102	%	80 - 120
			Total Cobalt (Co)	2024/07/25		103	%	80 - 120
			Total Copper (Cu)	2024/07/25		102	%	80 - 120
			Total Lead (Pb)	2024/07/25		102	%	80 - 120
			Total Antimony (Sb)	2024/07/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/07/25		103	%	80 - 120
			Total Nickel (Ni)	2024/07/25		102	%	80 - 120
			Total Selenium (Se)	2024/07/25		105	%	80 - 120
			Total Silver (Ag)	2024/07/25		104	%	80 - 120
			Total Arsenic (As)	2024/07/25		105	%	80 - 120
			Total Thallium (Tl)	2024/07/25		106	%	80 - 120
			Total Tin (Sn)	2024/07/25		105	%	80 - 120
			Total Titanium (Ti)	2024/07/25		104	%	80 - 120
			Total Uranium (U)	2024/07/25		106	%	80 - 120
			Total Vanadium (V)	2024/07/25		103	%	80 - 120
			Total Zinc (Zn)	2024/07/25		106	%	80 - 120
			Total Beryllium (Be)	2024/07/25		100	%	80 - 120
B452744	VSC	LCS	Total Iron (Fe)	2024/07/25		95	%	80 - 120
			Total Lithium (Li)	2024/07/25		94	%	80 - 120
			Total Magnesium (Mg)	2024/07/25		99	%	80 - 120
			Total Manganese (Mn)	2024/07/25		91	%	80 - 120
			Total Potassium (K)	2024/07/25		95	%	80 - 120
			Total Sodium (Na)	2024/07/25		91	%	80 - 120
			Total Strontium (Sr)	2024/07/25		98	%	80 - 120
			Total Sulphur (S)	2024/07/25		90	%	80 - 120
			Total Phosphorus (P)	2024/07/25		92	%	80 - 120
			Total Barium (Ba)	2024/07/25		99	%	80 - 120
			Total Silicon (Si)	2024/07/25		88	%	80 - 120
			Total Boron (B)	2024/07/25		92	%	80 - 120
			Total Calcium (Ca)	2024/07/25		94	%	80 - 120
B452982	MDO	LCS	Dissolved Organic Carbon (C)	2024/07/25		104	%	80 - 120
B454058	HE1	LCS	Total Suspended Solids	2024/07/26		103	%	80 - 120
B454264	JYU	LCS	Total Organic Carbon (C)	2024/07/26		100	%	80 - 120
B457234	JYU	LCS	Dissolved Organic Carbon (C)	2024/07/29		99	%	80 - 120
B457260	JYU	LCS	Total Organic Carbon (C)	2024/07/29		100	%	80 - 120
B452399	YL7	SRM	Total Nitrogen (N)	2024/07/25		104	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

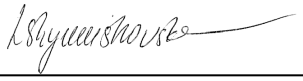
Bureau Veritas Job #: C455387
Report Date: 2024/08/06

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

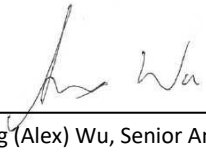
VALIDATION SIGNATURE PAGE

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

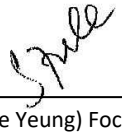
Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



Qiliang (Alex) Wu, Senior Analyst



Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

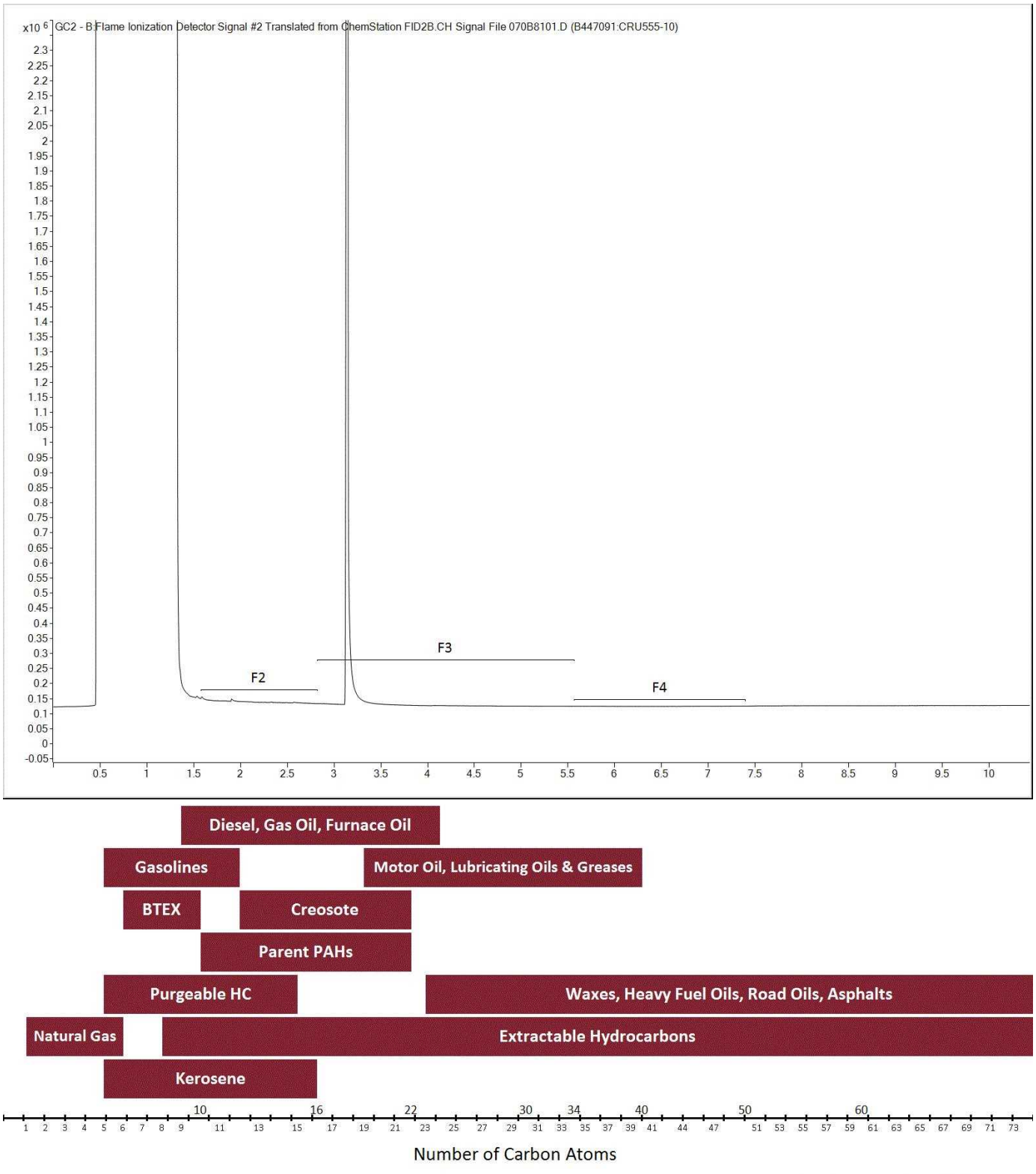
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C455387
Report Date: 2024/08/06
Bureau Veritas Sample: CRU555

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-09

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



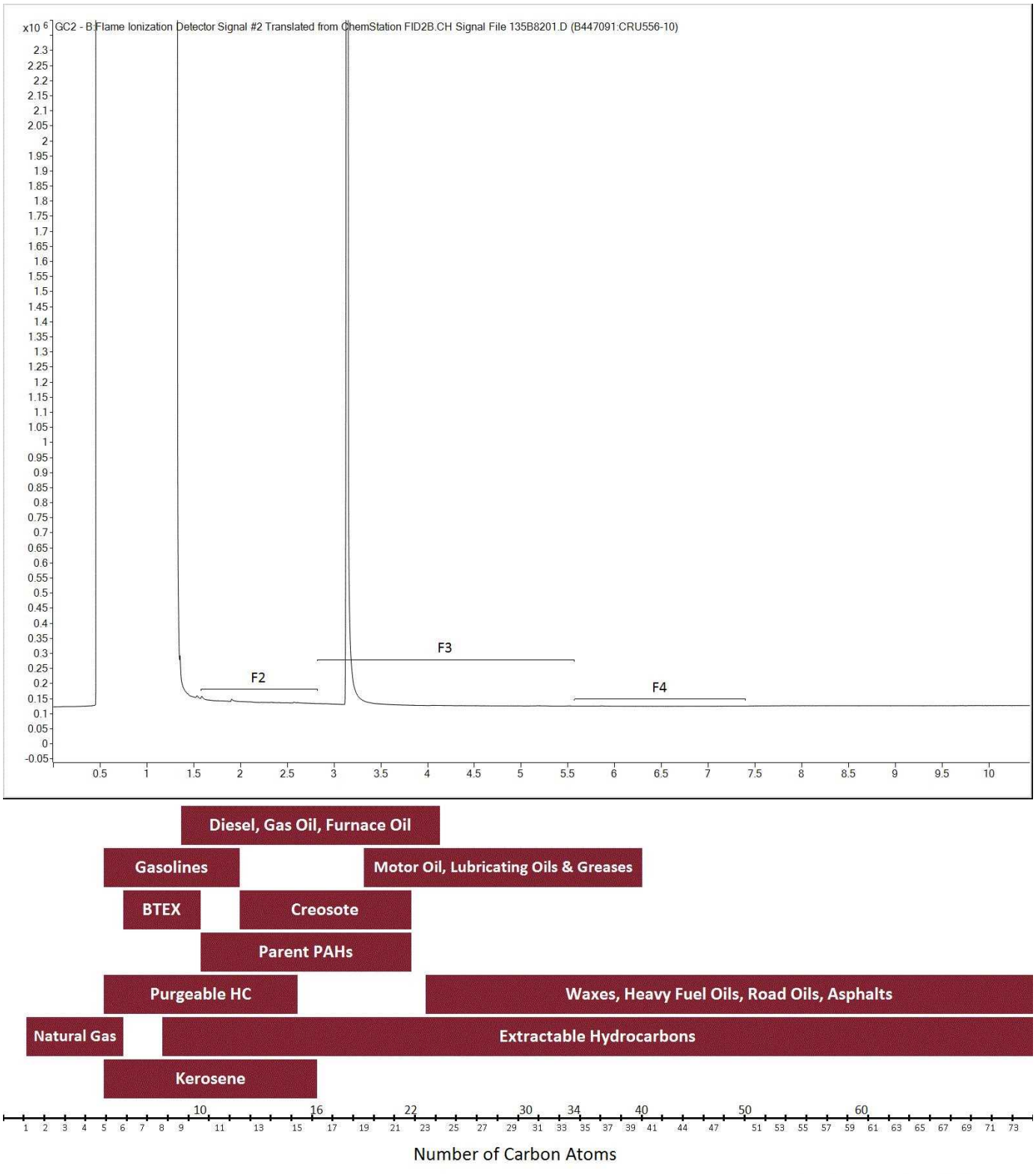
hpchem12\HPchem\1\DATA\2024\07\RUN0725

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

Bureau Veritas Job #: C455387
Report Date: 2024/08/06
Bureau Veritas Sample: CRU556

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-03

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

Maxxam
A Bureau Veritas Group Company

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Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292203

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: WORLEY
Contact Name: ALEX HAIGH	Contact Name: ALEX HAIGH
Address: 49 QUARRY PARK BLVD SE CALGARY, AB T2C 3E7	Address: 49 QUARRY PARK BLVD SE, CALGARY, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587-897-6249	Ph: 8587 897 6249
Sampler Name (Print): STACY GIBB; TINO NGUWBE	Consultant Project #: 417085-54419.24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☐	MERCURY: TOTAL ☒ DISSOLVED ☐	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, turbidity	Oil and grease	TOC, DOC, SULPHIDE	NITRATE, NITRITE, AMMONIA (total), TKN	ORTHOPHOSPHATE	SULPHUR - TOTAL + DISSOLVED	COD	ALKYLATED PAH, TPH
1	AEMP-DS-09	X				18	2024/07/19	11:36	X			X	X							X	X					X			X	X	X	X	X	X
2	AEMP-US-03	X				18	2024/07/19	13:26	X			X	X							X	X					X			X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

med2-2024-07-695

IOL SITE LOCATION: NORMAN WELLS, NT	REGULATORY CRITERIA / DETECTION LIMITS: ☐ Alberta Tier 1 ☐ CDWG ☐ SEQG (SK) ☐ NoSC (SK) ☒ CCME (incl. level) FAL ☐ Other	SPECIAL INSTRUCTIONS email canada.chemistry@worley.com cacal-IORdatatrack@worley.com stacy.gibb@worley.com IES A2601436	# JARS USED & NOT SUBMITTED Enter N/A for Water: N/A
IOL PROJECT # (if applicable): N/A			
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419.24200			

TURNAROUND TIME
- Standard (5 days) ☒
- Rush (3 days) ☐
- (2 days) ☐
- (1 day) ☐
- (same day) ☐

Date Required

	YES	NO	COOLER ID #				YES	NO	COOLER ID #				YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	5 (1)	4 (2)	4 (3)	✓		TEMP °C	7.6 (1)	7.4 (2)	7.4 (3)			TEMP °C	(1)	(2)	(3)
SEAL INTACT	✓						✓											
COOLING MEDIA PRESENT	✓						✓											

MCAL

LAB USE ONLY
MAXXAM JOB # L455387

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	TINO NGUWBE	2024/07/21	10:30	1.	BRENTON MATT	2024/07/22	13:17
2.	Kyle VanThaumaut	2024/07/22	1800	2.	NAVDEEP GILL	2024/07/23	07:00
3.				3.			

SAMPLES
LABELED BY: EDL
VERIFIED BY: SIC

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 299622

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/29
Report #: R3548562
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463460
Received: 2024/08/16, 15:35

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	2		Auto Calc
Cadmium - low level CCME - Dissolved	2		Auto Calc
Cadmium - low level CCME (Total)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter	2	AB SOP-00016	SM 24 5220D m
True Colour	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (2)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S)	2		Auto Calc
Hardness	2		Auto Calc
Mercury (Dissolved) by CV (3)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (3)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (3)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance	2		Auto Calc
Ammonia-N (Total)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N)	2		Auto Calc
Oil and Grease by IR	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (4)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (5)	2		Auto Calc
pH @25°C (6)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (7)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide	2	AB SOP-00080	SM 24 4500 S2-A D Fm

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Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 299622

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/29
Report #: R3548562
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463460
Received: 2024/08/16, 15:35

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	2	BBY WI-00033	Auto Calc
Nitrogen (Total)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (8)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR)	2	AB SOP-00061	SM 24 2540 D m
Turbidity	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) Silica gel clean up employed.
(3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(4) Alkylated PAH results are semiquantitative

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Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 299622

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/29
Report #: R3548562
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463460

Received: 2024/08/16, 15:35

(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(6) 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.
(7) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(8) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
29 Aug 2024 09:34:52

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTN290	CTN291			CTN291		
Sampling Date		2024/08/14 10:56	2024/08/14 10:56			2024/08/14 10:56		
COC Number		299622	299622			299622		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B482212	<0.10	0.10	B482212
Volatiles								
Benzene	mg/L	<0.00040	<0.00040	0.00040	B482316			
Toluene	mg/L	<0.00040	<0.00040	0.00040	B482316			
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B482316			
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B482316			
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B482316			
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B481850			
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B481850			
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B482316			
Extraction Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	85	85		B482212	88		B482212
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	93	92		B482316			
4-Bromofluorobenzene (sur.)	%	113	110		B482316			
D4-1,2-Dichloroethane (sur.)	%	94	92		B482316			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTN290		CTN291		
Sampling Date		2024/08/14 10:56		2024/08/14 10:56		
COC Number		299622		299622		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Calculated Parameters						
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	B481860	<0.20	0.20	B481860
Nutrients						
Total Nitrogen (N)	mg/L	<0.20 (1)	B483802	<0.20 (1)	0.20	B483813

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTN290		CTN291		
Sampling Date		2024/08/14 10:56		2024/08/14 10:56		
COC Number		299622		299622		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	0.000098	B481852	0.00014	0.000020	B481852
Total Mercury (Hg)	ug/L	<0.0019	B484862	0.0061	0.0019	B484862
Total Aluminum (Al)	mg/L	0.87	B487781	2.1	0.0030	B487651
Total Antimony (Sb)	mg/L	<0.00060	B487781	<0.00060	0.00060	B487651
Total Arsenic (As)	mg/L	0.00081	B487781	0.0021	0.00020	B487651
Total Barium (Ba)	mg/L	0.076	B487788	0.12	0.010	B487670
Total Beryllium (Be)	mg/L	<0.0010	B487781	<0.0010	0.0010	B487651
Total Boron (B)	mg/L	<0.020	B487788	<0.020	0.020	B487670
Total Calcium (Ca)	mg/L	48	B487788	46	0.30	B487670
Total Chromium (Cr)	mg/L	0.0018	B487781	0.0032	0.0010	B487651
Total Cobalt (Co)	mg/L	0.00071	B487781	0.0024	0.00030	B487651
Total Copper (Cu)	mg/L	0.0023	B487781	0.0054	0.0010	B487651
Total Iron (Fe)	mg/L	1.3	B487788	4.8	0.060	B487670
Total Lead (Pb)	mg/L	0.00098	B487781	0.0024	0.00020	B487651
Total Lithium (Li)	mg/L	<0.020	B487788	<0.020	0.020	B487670
Total Magnesium (Mg)	mg/L	17	B487788	14	0.20	B487670
Total Manganese (Mn)	mg/L	0.030	B487788	0.10	0.0040	B487670
Total Molybdenum (Mo)	mg/L	0.0012	B487781	0.0013	0.00020	B487651
Total Nickel (Ni)	mg/L	0.0036	B487781	0.0076	0.00050	B487651
Total Phosphorus (P)	mg/L	<0.10	B487788	0.13	0.10	B487670
Total Potassium (K)	mg/L	1.3	B487788	1.5	0.30	B487670
Total Selenium (Se)	mg/L	0.00069	B487781	0.00050	0.00020	B487651
Total Silicon (Si)	mg/L	4.6	B487788	4.3	0.50	B487670
Total Silver (Ag)	mg/L	<0.00010	B487781	<0.00010	0.00010	B487651
Total Sodium (Na)	mg/L	9.1	B487788	7.6	0.50	B487670
Total Strontium (Sr)	mg/L	0.29	B487788	0.25	0.020	B487670
Total Sulphur (S)	mg/L	31	B487788	17	0.20	B487670
Total Thallium (Tl)	mg/L	<0.00020	B487781	<0.00020	0.00020	B487651
Total Tin (Sn)	mg/L	<0.0010	B487781	<0.0010	0.0010	B487651
Total Titanium (Ti)	mg/L	0.037	B487781	0.027	0.0010	B487651
Total Uranium (U)	mg/L	0.0011	B487781	0.0011	0.00010	B487651
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTN290		CTN291		
Sampling Date		2024/08/14 10:56		2024/08/14 10:56		
COC Number		299622		299622		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.0030	B487781	0.0059	0.0010	B487651
Total Zinc (Zn)	mg/L	0.011	B487781	0.055	0.0030	B487651
RDL = Reportable Detection Limit						

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTN290			CTN290			CTN291		
Sampling Date		2024/08/14 10:56			2024/08/14 10:56			2024/08/14 10:56		
COC Number		299622			299622			299622		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	180	0.50	B481854				140	0.50	B481854
Ion Balance (% Difference)	%	1.6	N/A	B481855				2.0	N/A	B481855
Nitrate (N)	mg/L	0.068	0.010	B481857				0.053	0.010	B481857
Nitrate (NO3)	mg/L	0.30	0.044	B481856				0.23	0.044	B481856
Nitrite (NO2)	mg/L	<0.033	0.033	B481856				<0.033	0.033	B481856
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B481853				0.013	0.0020	B481853
Demand Parameters										
Chemical Oxygen Demand	mg/L	20	10	B483738	21	10	B483738	41	10	B483738
Elements										
Dissolved Cadmium (Cd)	mg/L	0.000026	0.000020	B481851				<0.000020	0.000020	B481851
Misc. Inorganics										
Conductivity	uS/cm	380	2.0	B486758				290	2.0	B486758
Dissolved Organic Carbon (C)	mg/L	2.9	0.50	B484522				3.3	0.50	B484947
pH	pH	8.14	N/A	B486757				8.05	N/A	B486757
Total Organic Carbon (C)	mg/L	2.8	0.50	B484367				3.2	0.50	B484367
Total Dissolved Solids	mg/L	240	10	B484252				180	10	B484252
Total Suspended Solids	mg/L	27	1.0	B484247				300	1.0	B484247
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B486752				<1.0	1.0	B486752
Alkalinity (Total as CaCO3)	mg/L	97	1.0	B486752				91	1.0	B486752
Bicarbonate (HCO3)	mg/L	120	1.0	B486752				110	1.0	B486752
Carbonate (CO3)	mg/L	<1.0	1.0	B486752				<1.0	1.0	B486752
Hydroxide (OH)	mg/L	<1.0	1.0	B486752				<1.0	1.0	B486752
Total Sulphide	mg/L	<0.0018	0.0018	B481919	0.0023	0.0018	B481919	0.012	0.0018	B481919
Chloride (Cl)	mg/L	8.9	1.0	B483134				7.4	1.0	B483134
Sulphate (SO4)	mg/L	84	1.0	B483134				49	1.0	B483134
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B486227				<0.015	0.015	B486333
Orthophosphate (P)	mg/L	<0.0030	0.0030	B482247				<0.0030	0.0030	B482247

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTN290			CTN290			CTN291		
Sampling Date		2024/08/14 10:56			2024/08/14 10:56			2024/08/14 10:56		
COC Number		299622			299622			299622		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B482065				<0.010	0.010	B482065
Nitrate plus Nitrite (N)	mg/L	0.068	0.010	B482065				0.053	0.010	B482065
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B491148				<4.4 (1)	4.4	B491148
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B482335				<2.0	2.0	B482335
Physical Properties										
True Colour	PtCo units	8.1	2.0	B482128				7.2	2.0	B482128
Physical Properties										
Turbidity	NTU	26	0.10	B481837				110	0.10	B481837

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) Detection limit raised based on sample volume used for analysis.

Bureau Veritas ID		CTN291		
Sampling Date		2024/08/14 10:56		
COC Number		299622		
	UNITS	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
Misc. Inorganics				
Dissolved Organic Carbon (C)	mg/L	3.2	0.50	B484947
Misc. Organics				
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B482335

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTN290	CTN291		
Sampling Date		2024/08/14 10:56	2024/08/14 10:56		
COC Number		299622	299622		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B481858
Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B481343
Acridine	ug/L	<0.040	<0.040	0.040	B481343
Anthracene	ug/L	<0.010	<0.010	0.010	B481343
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B481343
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B481343
Fluoranthene	ug/L	<0.010	<0.010	0.010	B481343
Fluorene	ug/L	<0.050	<0.050	0.050	B481343
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B481343
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Perylene	ug/L	<0.050	<0.050	0.050	B481343
Pyrene	ug/L	<0.020	<0.020	0.020	B481343
Quinoline	ug/L	<0.20	<0.20	0.20	B481343
Retene	ug/L	<0.050	<0.050	0.050	B481343
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTN290	CTN291		
Sampling Date		2024/08/14 10:56	2024/08/14 10:56		
COC Number		299622	299622		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C2-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C3-fluorene	ug/L	<0.050	<0.050	0.050	B481343
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	109	109		B481343
D8-ACENAPHTHYLENE (sur.)	%	85	85		B481343
D8-NAPHTHALENE (sur.)	%	76	74		B481343
TERPHENYL-D14 (sur.)	%	112	112		B481343
RDL = Reportable Detection Limit					

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTN290	CTN291		
Sampling Date		2024/08/14 10:56	2024/08/14 10:56		
COC Number		299622	299622		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B484876
RDL = Reportable Detection Limit					

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTN290		CTN291		
Sampling Date		2024/08/14 10:56		2024/08/14 10:56		
COC Number		299622		299622		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements						
Dissolved Aluminum (Al)	mg/L	0.063	B484009	0.032	0.0030	B483746
Dissolved Antimony (Sb)	mg/L	<0.00060	B484009	<0.00060	0.00060	B483746
Dissolved Arsenic (As)	mg/L	0.00029	B484009	0.00032	0.00020	B483746
Dissolved Barium (Ba)	mg/L	0.054	B483945	0.048	0.010	B483945
Dissolved Beryllium (Be)	mg/L	<0.0010	B484009	<0.0010	0.0010	B483746
Dissolved Boron (B)	mg/L	<0.020	B483945	<0.020	0.020	B483945
Dissolved Calcium (Ca)	mg/L	47	B483945	38	0.30	B483945
Dissolved Chromium (Cr)	mg/L	<0.0010	B484009	<0.0010	0.0010	B483746
Dissolved Cobalt (Co)	mg/L	<0.00030	B484009	<0.00030	0.00030	B483746
Dissolved Copper (Cu)	mg/L	0.0013	B484009	<0.0010	0.0010	B483746
Dissolved Iron (Fe)	mg/L	<0.060	B483945	<0.060	0.060	B483945
Dissolved Lead (Pb)	mg/L	<0.00020	B484009	<0.00020	0.00020	B483746
Dissolved Lithium (Li)	mg/L	<0.020	B483945	<0.020	0.020	B483945
Dissolved Magnesium (Mg)	mg/L	16	B483945	11	0.20	B483945
Dissolved Manganese (Mn)	mg/L	<0.0040	B483945	0.0043	0.0040	B483945
Dissolved Molybdenum (Mo)	mg/L	0.00096	B484009	0.00099	0.00020	B483746
Dissolved Nickel (Ni)	mg/L	0.0012	B484009	0.00097	0.00050	B483746
Dissolved Phosphorus (P)	mg/L	<0.10	B483945	<0.10	0.10	B483945
Dissolved Potassium (K)	mg/L	0.87	B483945	0.85	0.30	B483945
Dissolved Selenium (Se)	mg/L	0.00048	B484009	0.00040	0.00020	B483746
Dissolved Silicon (Si)	mg/L	1.7	B483945	1.7	0.50	B483945
Dissolved Silver (Ag)	mg/L	<0.00010	B484009	<0.00010	0.00010	B483746
Dissolved Sodium (Na)	mg/L	9.4	B483945	7.7	0.50	B483945
Dissolved Strontium (Sr)	mg/L	0.29	B483945	0.23	0.020	B483945
Dissolved Sulphur (S)	mg/L	28	B483945	17	0.20	B483945
Dissolved Thallium (Tl)	mg/L	<0.00020	B484009	<0.00020	0.00020	B483746
Dissolved Tin (Sn)	mg/L	<0.0010	B484009	<0.0010	0.0010	B483746
Dissolved Titanium (Ti)	mg/L	<0.0010	B484009	<0.0010	0.0010	B483746
Dissolved Uranium (U)	mg/L	0.00081	B484009	0.00079	0.00010	B483746
Dissolved Vanadium (V)	mg/L	<0.0010	B484009	<0.0010	0.0010	B483746
Dissolved Zinc (Zn)	mg/L	<0.0030	B484009	<0.0030	0.0030	B483746
RDL = Reportable Detection Limit						

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTN290
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/08/14
Relinquished: 2024/08/15
Received: 2024/08/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486752	N/A	2024/08/21	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B482316	N/A	2024/08/19	Raheela Sahar
F1-BTEX	CALC/MS	B481850	N/A	2024/08/20	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B481851	N/A	2024/08/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B481852	N/A	2024/08/23	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B483134	N/A	2024/08/19	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B483738	N/A	2024/08/19	Amy Phan
True Colour	SPEC/COL	B482128	N/A	2024/08/17	Monakint Patel
Carbon (DOC)	TECH	B484522	N/A	2024/08/20	Jill Yuen
Conductivity @25C	COND	B486758	N/A	2024/08/21	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/21	Bryanna Quach
Sulphide (as H2S)	CALC	B481853	N/A	2024/08/19	Automated Statchk
Hardness	CALC	B481854	N/A	2024/08/21	Automated Statchk
Mercury (Dissolved) by CV	CV	B484876	2024/08/20	2024/08/21	Kevin Hung
Mercury (Total) by CV	CV	B484862	2024/08/20	2024/08/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B483945	N/A	2024/08/20	Sarah Dolan
Elements by ICP - Total	ICPA	B487788	2024/08/22	2024/08/22	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B484009	N/A	2024/08/20	Jason Bao
Elements by ICPMS - Total	ICPM	B487781	2024/08/22	2024/08/22	Jason Bao
Ion Balance	CALC	B481855	N/A	2024/08/22	Automated Statchk
Ammonia-N (Total)	KONE	B486227	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B481856	N/A	2024/08/18	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B482065	N/A	2024/08/17	Isabelle White
Nitrate (as N)	CALC	B481857	2024/08/18	2024/08/18	Automated Statchk
Oil and Grease by IR	IR	B491148	2024/08/26	2024/08/28	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/21	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B481858	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486757	N/A	2024/08/21	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B482247	N/A	2024/08/17	Isabelle White
Total Sulphide	SPEC	B481919	N/A	2024/08/17	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B484252	2024/08/20	2024/08/21	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B481860	N/A	2024/08/20	Automated Statchk
Nitrogen (Total)	AC/COL	B483802	2024/08/19	2024/08/20	Yan Lin
Carbon (Total Organic)	TECH	B484367	N/A	2024/08/20	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B482335	2024/08/19	2024/08/20	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B484247	2024/08/20	2024/08/22	Haydee Estilong
Turbidity	TURB	B481837	N/A	2024/08/17	Thi Boi Tran Nguyen

Bureau Veritas ID: CTN290 Dup
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/08/14
Relinquished: 2024/08/15
Received: 2024/08/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
COD by Colorimeter	M/PROB	B483738	N/A	2024/08/19	Amy Phan

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTN290 Dup
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/08/14
Relinquished: 2024/08/15
Received: 2024/08/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Sulphide	SPEC	B481919	N/A	2024/08/17	Ly Vu

Bureau Veritas ID: CTN291
Sample ID: AEMP-DS-07
Matrix: Water

Collected: 2024/08/14
Relinquished: 2024/08/15
Received: 2024/08/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486752	N/A	2024/08/21	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B482316	N/A	2024/08/19	Raheela Sahar
F1-BTEX	CALC/MS	B481850	N/A	2024/08/20	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B481851	N/A	2024/08/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B481852	N/A	2024/08/23	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B483134	N/A	2024/08/19	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B483738	N/A	2024/08/19	Amy Phan
True Colour	SPEC/COL	B482128	N/A	2024/08/17	Monakint Patel
Carbon (DOC)	TECH	B484947	N/A	2024/08/20	Jill Yuen
Conductivity @25C	COND	B486758	N/A	2024/08/21	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/21	Bryanna Quach
Sulphide (as H2S)	CALC	B481853	N/A	2024/08/19	Automated Statchk
Hardness	CALC	B481854	N/A	2024/08/21	Automated Statchk
Mercury (Dissolved) by CV	CV	B484876	2024/08/20	2024/08/21	Kevin Hung
Mercury (Total) by CV	CV	B484862	2024/08/20	2024/08/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B483945	N/A	2024/08/20	Sarah Dolan
Elements by ICP - Total	ICPA	B487670	2024/08/22	2024/08/22	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B483746	N/A	2024/08/20	Jason Bao
Elements by ICPMS - Total	ICPM	B487651	2024/08/22	2024/08/23	Jason Bao
Ion Balance	CALC	B481855	N/A	2024/08/22	Automated Statchk
Ammonia-N (Total)	KONE	B486333	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B481856	N/A	2024/08/18	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B482065	N/A	2024/08/17	Isabelle White
Nitrate (as N)	CALC	B481857	2024/08/18	2024/08/18	Automated Statchk
Oil and Grease by IR	IR	B491148	2024/08/26	2024/08/28	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/21	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B481858	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486757	N/A	2024/08/21	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B482247	N/A	2024/08/17	Isabelle White
Total Sulphide	SPEC	B481919	N/A	2024/08/17	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B484252	2024/08/20	2024/08/21	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B481860	N/A	2024/08/21	Automated Statchk
Nitrogen (Total)	AC/COL	B483813	2024/08/19	2024/08/20	Yan Lin
Carbon (Total Organic)	TECH	B484367	N/A	2024/08/20	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B482335	2024/08/19	2024/08/20	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B484247	2024/08/20	2024/08/22	Haydee Estilong
Turbidity	TURB	B481837	N/A	2024/08/17	Thi Boi Tran Nguyen

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Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTN291 Dup
Sample ID: AEMP-DS-07
Matrix: Water

Collected: 2024/08/14
Relinquished: 2024/08/15
Received: 2024/08/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbon (DOC)	TECH	B484947	N/A	2024/08/20	Jill Yuen
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/21	Bryanna Quach
Hydrocarbon by IR (Mineral oil & grease)	IR	B482335	2024/08/19	2024/08/20	Ramandeep Ramandeep

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GENERAL COMMENTS

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

Package 1	6.0°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B481343	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/21		122	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		126	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		84	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		66	%	50 - 130
			Acenaphthene	2024/08/21	<0.10		ug/L	
			Acenaphthylene	2024/08/21	<0.10		ug/L	
			Acridine	2024/08/21	<0.040		ug/L	
			Anthracene	2024/08/21	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/21	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/21	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/21	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/21	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/21	<0.050		ug/L	
			Chrysene	2024/08/21	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/21	<0.0075		ug/L	
			Fluoranthene	2024/08/21	<0.010		ug/L	
			Fluorene	2024/08/21	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/21	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/21	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/21	<0.10		ug/L	
			Naphthalene	2024/08/21	<0.10		ug/L	
			Phenanthrene	2024/08/21	<0.050		ug/L	
			Perylene	2024/08/21	<0.050		ug/L	
			Pyrene	2024/08/21	<0.020		ug/L	
			Quinoline	2024/08/21	<0.20		ug/L	
			Retene	2024/08/21	<0.050		ug/L	
			C1-Naphthalene	2024/08/21	<0.10		ug/L	
			C3-Naphthalene	2024/08/21	<0.10		ug/L	
			C4-Naphthalene	2024/08/21	<0.10		ug/L	
			C2-Naphthalene	2024/08/21	<0.10		ug/L	
			Biphenyl	2024/08/21	<0.020		ug/L	
			C1-biphenyl	2024/08/21	<0.020		ug/L	
			C2-biphenyl	2024/08/21	<0.020		ug/L	
			C1-fluorene	2024/08/21	<0.050		ug/L	
			C2-fluorene	2024/08/21	<0.050		ug/L	
			C3-fluorene	2024/08/21	<0.050		ug/L	
			Dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/21	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/21	<0.10		ug/L	
B481837	TNY	Method Blank	Turbidity	2024/08/17	<0.10		NTU	
B481919	LYV	Method Blank	Total Sulphide	2024/08/17	<0.0018		mg/L	
B482065	ISW	Method Blank	Nitrite (N)	2024/08/17	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/17	<0.010		mg/L	
B482128	MOP	Method Blank	True Colour	2024/08/17	<2.0		PtCo units	
B482212	BQU	Method Blank	O-TERPHENYL (sur.)	2024/08/21		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21	<0.10		mg/L	
B482247	ISW	Method Blank	Orthophosphate (P)	2024/08/17	<0.0030		mg/L	
B482316	RSA	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/19		98	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/19		100	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/19		98	%	50 - 140
			Benzene	2024/08/19	<0.00040		mg/L	
			Toluene	2024/08/19	<0.00040		mg/L	
			Ethylbenzene	2024/08/19	<0.00040		mg/L	
			m & p-Xylene	2024/08/19	<0.00080		mg/L	
			o-Xylene	2024/08/19	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/19	<0.10		mg/L	
B482335	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/20	<2.0		mg/L	
B483134	HAP	Method Blank	Chloride (Cl)	2024/08/19	<1.0		mg/L	
			Sulphate (SO4)	2024/08/19	<1.0		mg/L	
B483738	AP1	Method Blank	Chemical Oxygen Demand	2024/08/19	<10		mg/L	
B483746	JAB	Method Blank	Dissolved Aluminum (Al)	2024/08/20	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/20	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/20	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/20	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/20	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/20	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/20	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/20	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/20	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/20	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/20	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/20	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/20	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/20	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/20	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/20	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/20	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/20	<0.0010		mg/L	
B483802	YL7	Method Blank	Total Nitrogen (N)	2024/08/20	<0.020		mg/L	
B483813	YL7	Method Blank	Total Nitrogen (N)	2024/08/20	<0.020		mg/L	
B483945	S1D	Method Blank	Dissolved Iron (Fe)	2024/08/20	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/20	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/20	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/20	<0.0040		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Potassium (K)	2024/08/20	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/20	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/20	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/20	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/20	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/20	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/20	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/20	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/20	<0.30		mg/L	
B484009	JAB	Method Blank	Dissolved Aluminum (Al)	2024/08/20	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/20	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/20	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/20	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/20	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/20	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/20	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/20	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/20	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/20	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/20	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/20	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/20	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/20	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/20	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/20	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/20	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/20	<0.0010		mg/L	
B484247	HE1	Method Blank	Total Suspended Solids	2024/08/22	<1.0		mg/L	
B484252	HE1	Method Blank	Total Dissolved Solids	2024/08/21	<10		mg/L	
B484367	JYU	Method Blank	Total Organic Carbon (C)	2024/08/20	<0.50		mg/L	
B484522	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/20	<0.50		mg/L	
B484862	KHU	Method Blank	Total Mercury (Hg)	2024/08/20	<0.0019		ug/L	
B484876	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/21	<0.0019		ug/L	
B484947	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/20	<0.50		mg/L	
B486227	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B486333	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B486752	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/21	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/21	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/21	<1.0		mg/L	
			Carbonate (CO3)	2024/08/21	<1.0		mg/L	
			Hydroxide (OH)	2024/08/21	<1.0		mg/L	
B486758	AYE	Method Blank	Conductivity	2024/08/21	<2.0		uS/cm	
B487651	JAB	Method Blank	Total Aluminum (Al)	2024/08/23	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/23	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/23	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/23	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/23	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/23	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/23	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/23	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/23	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/23	<0.00010		mg/L	

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			Total Arsenic (As)	2024/08/23	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/23	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/23	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/23	<0.0010		mg/L	
			Total Uranium (U)	2024/08/23	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/23	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/23	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/23	<0.0010		mg/L	
B487670	VSC	Method Blank	Total Iron (Fe)	2024/08/22	<0.060		mg/L	
			Total Lithium (Li)	2024/08/22	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/22	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/22	<0.0040		mg/L	
			Total Potassium (K)	2024/08/22	<0.30		mg/L	
			Total Sodium (Na)	2024/08/22	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/22	<0.020		mg/L	
			Total Sulphur (S)	2024/08/22	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/22	<0.10		mg/L	
			Total Barium (Ba)	2024/08/22	<0.010		mg/L	
			Total Silicon (Si)	2024/08/22	<0.50		mg/L	
			Total Boron (B)	2024/08/22	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/22	<0.30		mg/L	
B487781	JAB	Method Blank	Total Aluminum (Al)	2024/08/22	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/22	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/22	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/22	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/22	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/22	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/22	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/22	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/22	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/22	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/22	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/22	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/22	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/22	<0.0010		mg/L	
			Total Uranium (U)	2024/08/22	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/22	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/22	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/22	<0.0010		mg/L	
B487788	VSC	Method Blank	Total Iron (Fe)	2024/08/23	<0.060		mg/L	
			Total Lithium (Li)	2024/08/23	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/23	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/23	<0.0040		mg/L	
			Total Potassium (K)	2024/08/23	<0.30		mg/L	
			Total Sodium (Na)	2024/08/23	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/23	<0.020		mg/L	
			Total Sulphur (S)	2024/08/23	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/23	<0.10		mg/L	
			Total Barium (Ba)	2024/08/23	<0.010		mg/L	
			Total Silicon (Si)	2024/08/23	<0.50		mg/L	
			Total Boron (B)	2024/08/23	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/23	<0.30		mg/L	

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B491148	RRA	Method Blank	Oil and grease	2024/08/28	<2.0		mg/L	
B481919	LYV	RPD [CTN290-07]	Total Sulphide	2024/08/17	NC		%	20
B483738	AP1	RPD [CTN290-03]	Chemical Oxygen Demand	2024/08/19	5.1		%	20
B482212	BQU	RPD [CTN291-11]	F2 (C10-C16 Hydrocarbons)	2024/08/21	NC		%	30
B482335	RRA	RPD [CTN291-14]	Total Petroleum Hydrocarbon	2024/08/20	NC		%	30
B484947	JYU	RPD [CTN291-04]	Dissolved Organic Carbon (C)	2024/08/20	3.7		%	20
B481919	LYV	Matrix Spike [CTN291-07]	Total Sulphide	2024/08/17		6.1 (1)	%	80 - 120
B482212	BQU	Matrix Spike [CTN290-11]	O-TERPHENYL (sur.)	2024/08/21		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		91	%	60 - 140
B482335	RRA	Matrix Spike [CTN290-14]	Total Petroleum Hydrocarbon	2024/08/20		92	%	70 - 130
B483738	AP1	Matrix Spike [CTN290-03]	Chemical Oxygen Demand	2024/08/19		105	%	80 - 120
B484947	JYU	Matrix Spike [CTN291-04]	Dissolved Organic Carbon (C)	2024/08/20		93	%	75 - 125
B481343	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/21		110	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		76	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		60	%	50 - 130
			Acenaphthene	2024/08/21		75	%	50 - 130
			Acenaphthylene	2024/08/21		72	%	50 - 130
			Acridine	2024/08/21		87	%	50 - 130
			Anthracene	2024/08/21		82	%	50 - 130
			Benzo(a)anthracene	2024/08/21		89	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/21		91	%	50 - 130
			Benzo(k)fluoranthene	2024/08/21		105	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/21		86	%	50 - 130
			Benzo(c)phenanthrene	2024/08/21		91	%	50 - 130
			Benzo(a)pyrene	2024/08/21		89	%	50 - 130
			Benzo(e)pyrene	2024/08/21		83	%	50 - 130
			Chrysene	2024/08/21		98	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/21		92	%	50 - 130
			Fluoranthene	2024/08/21		93	%	50 - 130
			Fluorene	2024/08/21		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/21		82	%	50 - 130
			2-Methylnaphthalene	2024/08/21		69	%	50 - 130
			Naphthalene	2024/08/21		53	%	50 - 130
			Phenanthrene	2024/08/21		85	%	50 - 130
			Perylene	2024/08/21		85	%	50 - 130
			Pyrene	2024/08/21		93	%	50 - 130
			Quinoline	2024/08/21		98	%	50 - 130
			C1-Naphthalene	2024/08/21		44 (1)	%	50 - 130
			C3-Naphthalene	2024/08/21		72	%	50 - 130
			C2-Naphthalene	2024/08/21		54	%	50 - 130
			C1-biphenyl	2024/08/21		44 (1)	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/21		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/21		91	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/21		90	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/21		91	%	30 - 130
			1-Methylnaphthalene	2024/08/21		44 (1)	%	50 - 130
B481837	TNY	LCS	Turbidity	2024/08/17		100	%	80 - 120
B481919	LYV	LCS	Total Sulphide	2024/08/17		88	%	80 - 120
B482065	ISW	LCS	Nitrite (N)	2024/08/17		98	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/17		106	%	80 - 120
B482128	MOP	LCS	True Colour	2024/08/17		100	%	80 - 120

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B482212	BQU	LCS	O-TERPHENYL (sur.)	2024/08/21		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		91	%	60 - 140
B482247	ISW	LCS	Orthophosphate (P)	2024/08/17		101	%	80 - 120
B482316	RSA	LCS	1,4-Difluorobenzene (sur.)	2024/08/19		101	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/19		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/19		100	%	50 - 140
			Benzene	2024/08/19		96	%	60 - 130
			Toluene	2024/08/19		99	%	60 - 130
			Ethylbenzene	2024/08/19		104	%	60 - 130
			m & p-Xylene	2024/08/19		103	%	60 - 130
			o-Xylene	2024/08/19		101	%	60 - 130
			F1 (C6-C10)	2024/08/19		107	%	60 - 140
B482335	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/20		93	%	70 - 130
B483134	HAP	LCS	Chloride (Cl)	2024/08/19		97	%	80 - 120
			Sulphate (SO4)	2024/08/19		101	%	80 - 120
B483738	AP1	LCS	Chemical Oxygen Demand	2024/08/19		101	%	80 - 120
B483746	JAB	LCS	Dissolved Aluminum (Al)	2024/08/20		119	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/20		96	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/20		93	%	80 - 120
			Dissolved Copper (Cu)	2024/08/20		94	%	80 - 120
			Dissolved Lead (Pb)	2024/08/20		92	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/20		93	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/20		91	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/20		94	%	80 - 120
			Dissolved Selenium (Se)	2024/08/20		98	%	80 - 120
			Dissolved Silver (Ag)	2024/08/20		92	%	80 - 120
			Dissolved Arsenic (As)	2024/08/20		96	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/20		89	%	80 - 120
			Dissolved Tin (Sn)	2024/08/20		94	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/20		92	%	80 - 120
			Dissolved Uranium (U)	2024/08/20		92	%	80 - 120
			Dissolved Vanadium (V)	2024/08/20		100	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/20		84	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/20		86	%	80 - 120
B483802	YL7	LCS	Total Nitrogen (N)	2024/08/20		99	%	80 - 120
B483813	YL7	LCS	Total Nitrogen (N)	2024/08/20		99	%	80 - 120
B483945	S1D	LCS	Dissolved Iron (Fe)	2024/08/20		107	%	80 - 120
			Dissolved Lithium (Li)	2024/08/20		105	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/20		107	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/20		105	%	80 - 120
			Dissolved Potassium (K)	2024/08/20		103	%	80 - 120
			Dissolved Sodium (Na)	2024/08/20		106	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/20		98	%	80 - 120
			Dissolved Sulphur (S)	2024/08/20		102	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/20		103	%	80 - 120
			Dissolved Barium (Ba)	2024/08/20		99	%	80 - 120
			Dissolved Silicon (Si)	2024/08/20		100	%	80 - 120
			Dissolved Boron (B)	2024/08/20		96	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/20		105	%	80 - 120
B484009	JAB	LCS	Dissolved Aluminum (Al)	2024/08/20		116	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/20		88	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/20		88	%	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 Copper (Cu)	2024/08/20		88	%	80 - 120
			Dissolved Lead (Pb)	2024/08/20		86	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/20		88	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/20		85	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/20		86	%	80 - 120
			Dissolved Selenium (Se)	2024/08/20		89	%	80 - 120
			Dissolved Silver (Ag)	2024/08/20		85	%	80 - 120
			Dissolved Arsenic (As)	2024/08/20		90	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/20		83	%	80 - 120
			Dissolved Tin (Sn)	2024/08/20		86	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/20		87	%	80 - 120
			Dissolved Uranium (U)	2024/08/20		85	%	80 - 120
			Dissolved Vanadium (V)	2024/08/20		90	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/20		76 (1)	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/20		81	%	80 - 120
B484247	HE1	LCS	Total Suspended Solids	2024/08/22		99	%	80 - 120
B484252	HE1	LCS	Total Dissolved Solids	2024/08/21		98	%	80 - 120
B484367	JYU	LCS	Total Organic Carbon (C)	2024/08/20		95	%	80 - 120
B484522	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/20		105	%	80 - 120
B484862	KHU	LCS	Total Mercury (Hg)	2024/08/20		94	%	80 - 120
B484876	KHU	LCS	Dissolved Mercury (Hg)	2024/08/21		99	%	80 - 120
B484947	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/20		98	%	80 - 120
B486227	AFI	LCS	Total Ammonia (N)	2024/08/21		101	%	80 - 120
B486333	AFI	LCS	Total Ammonia (N)	2024/08/21		101	%	80 - 120
B486752	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/21		98	%	80 - 120
B486757	AYE	LCS	pH	2024/08/21		100	%	97 - 103
B486758	AYE	LCS	Conductivity	2024/08/21		98	%	90 - 110
B487651	JAB	LCS	Total Aluminum (Al)	2024/08/23		104	%	80 - 120
			Total Chromium (Cr)	2024/08/23		96	%	80 - 120
			Total Cobalt (Co)	2024/08/23		98	%	80 - 120
			Total Copper (Cu)	2024/08/23		97	%	80 - 120
			Total Lead (Pb)	2024/08/23		96	%	80 - 120
			Total Antimony (Sb)	2024/08/23		92	%	80 - 120
			Total Molybdenum (Mo)	2024/08/23		97	%	80 - 120
			Total Nickel (Ni)	2024/08/23		96	%	80 - 120
			Total Selenium (Se)	2024/08/23		89	%	80 - 120
			Total Silver (Ag)	2024/08/23		93	%	80 - 120
			Total Arsenic (As)	2024/08/23		90	%	80 - 120
			Total Thallium (Tl)	2024/08/23		98	%	80 - 120
			Total Tin (Sn)	2024/08/23		95	%	80 - 120
			Total Titanium (Ti)	2024/08/23		96	%	80 - 120
			Total Uranium (U)	2024/08/23		97	%	80 - 120
			Total Vanadium (V)	2024/08/23		96	%	80 - 120
			Total Zinc (Zn)	2024/08/23		85	%	80 - 120
			Total Beryllium (Be)	2024/08/23		99	%	80 - 120
B487670	VSC	LCS	Total Iron (Fe)	2024/08/22		104	%	80 - 120
			Total Lithium (Li)	2024/08/22		98	%	80 - 120
			Total Magnesium (Mg)	2024/08/22		97	%	80 - 120
			Total Manganese (Mn)	2024/08/22		100	%	80 - 120
			Total Potassium (K)	2024/08/22		97	%	80 - 120
			Total Sodium (Na)	2024/08/22		94	%	80 - 120
			Total Strontium (Sr)	2024/08/22		97	%	80 - 120

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Sulphur (S)	2024/08/22		97	%	80 - 120
			Total Phosphorus (P)	2024/08/22		101	%	80 - 120
			Total Barium (Ba)	2024/08/22		101	%	80 - 120
			Total Silicon (Si)	2024/08/22		98	%	80 - 120
			Total Boron (B)	2024/08/22		102	%	80 - 120
			Total Calcium (Ca)	2024/08/22		97	%	80 - 120
B487781	JAB	LCS	Total Aluminum (Al)	2024/08/22		113	%	80 - 120
			Total Chromium (Cr)	2024/08/22		107	%	80 - 120
			Total Cobalt (Co)	2024/08/22		108	%	80 - 120
			Total Copper (Cu)	2024/08/22		108	%	80 - 120
			Total Lead (Pb)	2024/08/22		106	%	80 - 120
			Total Antimony (Sb)	2024/08/22		110	%	80 - 120
			Total Molybdenum (Mo)	2024/08/22		105	%	80 - 120
			Total Nickel (Ni)	2024/08/22		108	%	80 - 120
			Total Selenium (Se)	2024/08/22		106	%	80 - 120
			Total Silver (Ag)	2024/08/22		104	%	80 - 120
			Total Arsenic (As)	2024/08/22		112	%	80 - 120
			Total Thallium (Tl)	2024/08/22		111	%	80 - 120
			Total Tin (Sn)	2024/08/22		103	%	80 - 120
			Total Titanium (Ti)	2024/08/22		106	%	80 - 120
			Total Uranium (U)	2024/08/22		110	%	80 - 120
			Total Vanadium (V)	2024/08/22		109	%	80 - 120
			Total Zinc (Zn)	2024/08/22		112	%	80 - 120
			Total Beryllium (Be)	2024/08/22		103	%	80 - 120
B487788	VSC	LCS	Total Iron (Fe)	2024/08/22		110	%	80 - 120
			Total Lithium (Li)	2024/08/22		93	%	80 - 120
			Total Magnesium (Mg)	2024/08/22		95	%	80 - 120
			Total Manganese (Mn)	2024/08/22		105	%	80 - 120
			Total Potassium (K)	2024/08/22		92	%	80 - 120
			Total Sodium (Na)	2024/08/22		90	%	80 - 120
			Total Strontium (Sr)	2024/08/22		92	%	80 - 120
			Total Sulphur (S)	2024/08/22		108	%	80 - 120
			Total Phosphorus (P)	2024/08/22		106	%	80 - 120
			Total Barium (Ba)	2024/08/22		96	%	80 - 120
			Total Silicon (Si)	2024/08/22		103	%	80 - 120
			Total Boron (B)	2024/08/22		96	%	80 - 120
			Total Calcium (Ca)	2024/08/22		93	%	80 - 120
B491148	RRA	LCS	Oil and grease	2024/08/28		94	%	70 - 130
B483802	YL7	SRM	Total Nitrogen (N)	2024/08/20		100	%	80 - 120
B483813	YL7	SRM	Total Nitrogen (N)	2024/08/20		102	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

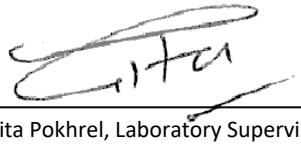
Bureau Veritas Job #: C463460
Report Date: 2024/08/29

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

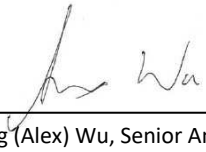
VALIDATION SIGNATURE PAGE

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

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Gita Pokhrel, Laboratory Supervisor



Qiliang (Alex) Wu, Senior Analyst

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

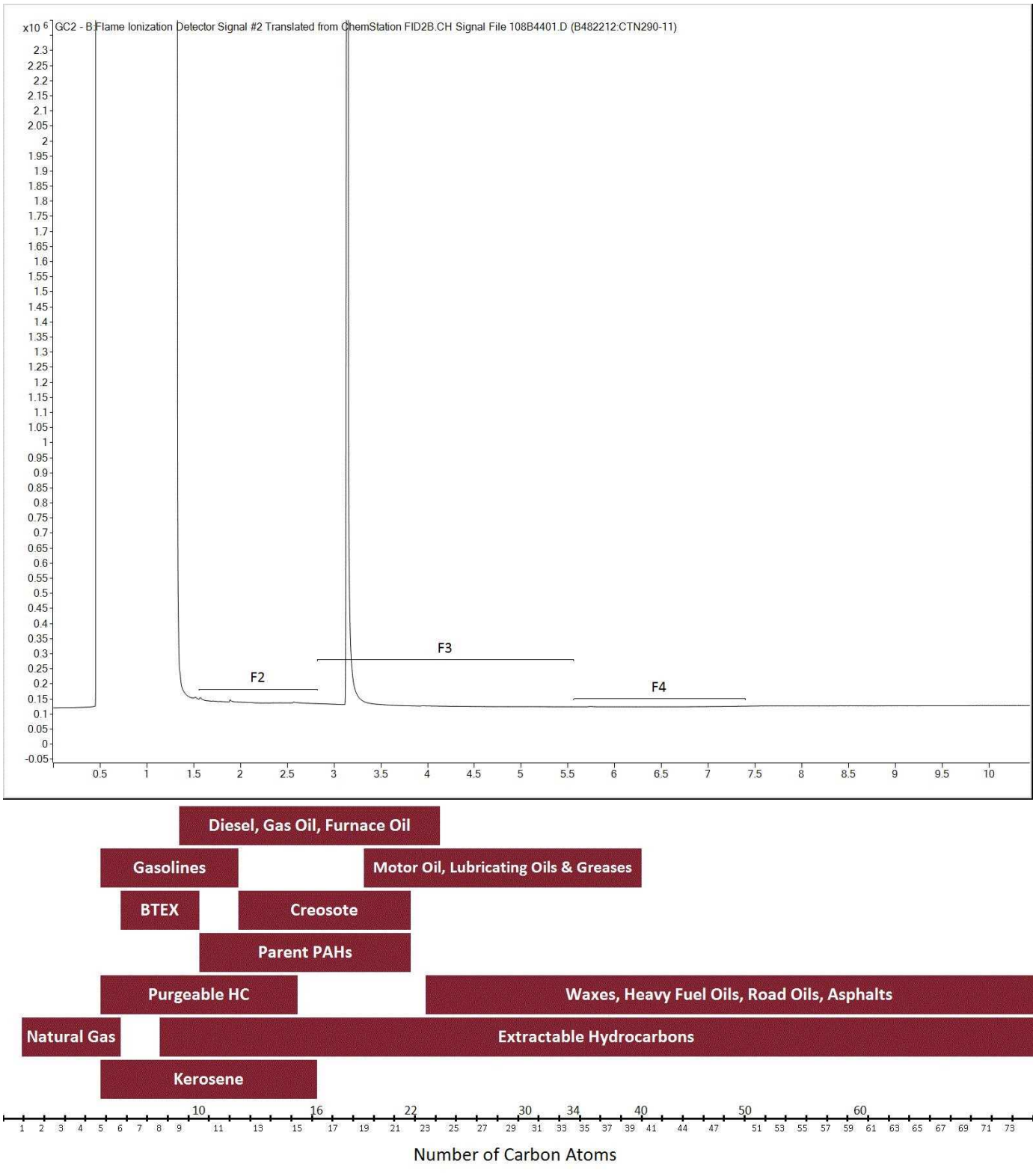
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C463460
Report Date: 2024/08/29
Bureau Veritas Sample: CTN290

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-06

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



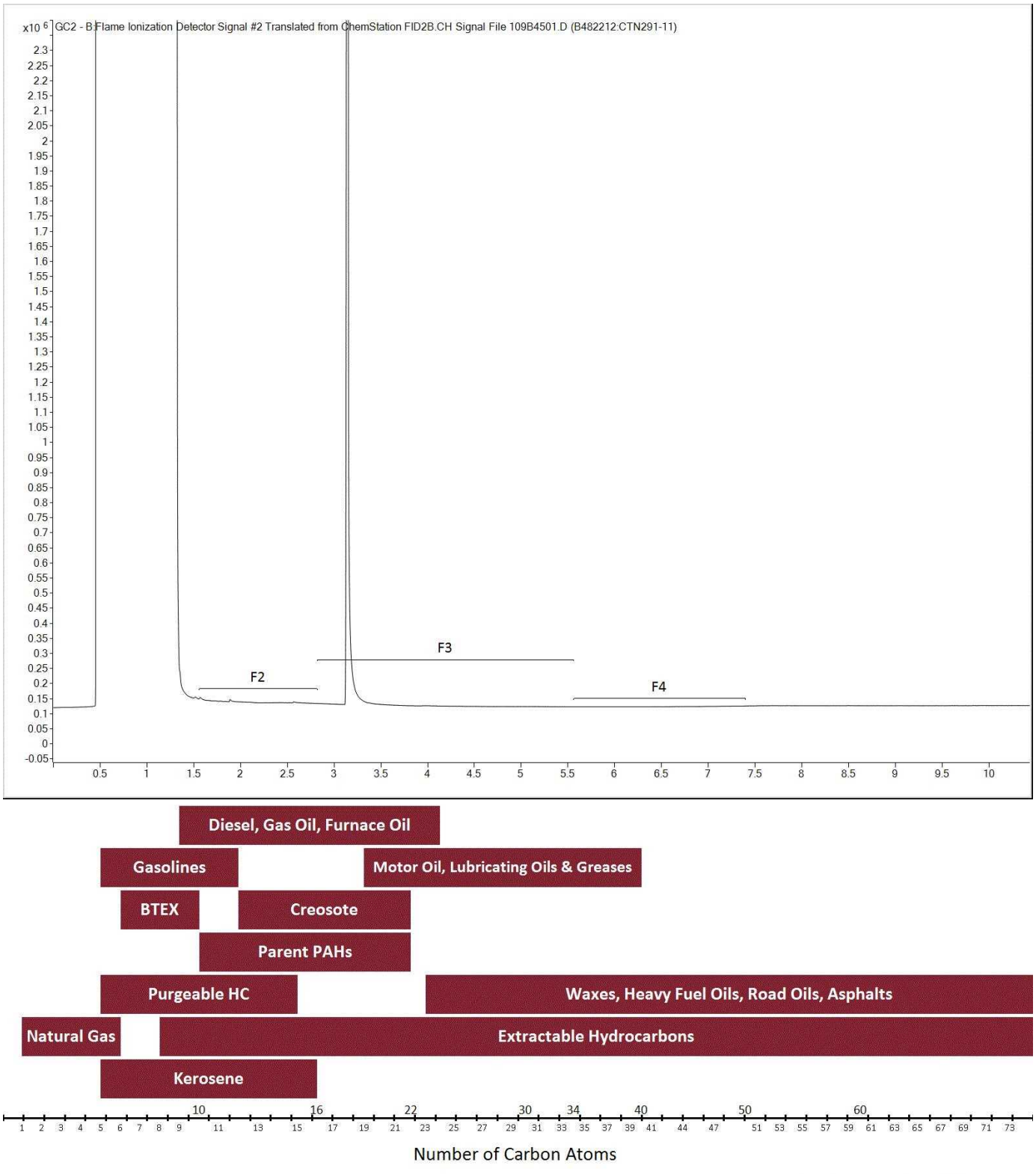
hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Bureau Veritas Job #: C463460
Report Date: 2024/08/29
Bureau Veritas Sample: CTN291

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-07

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

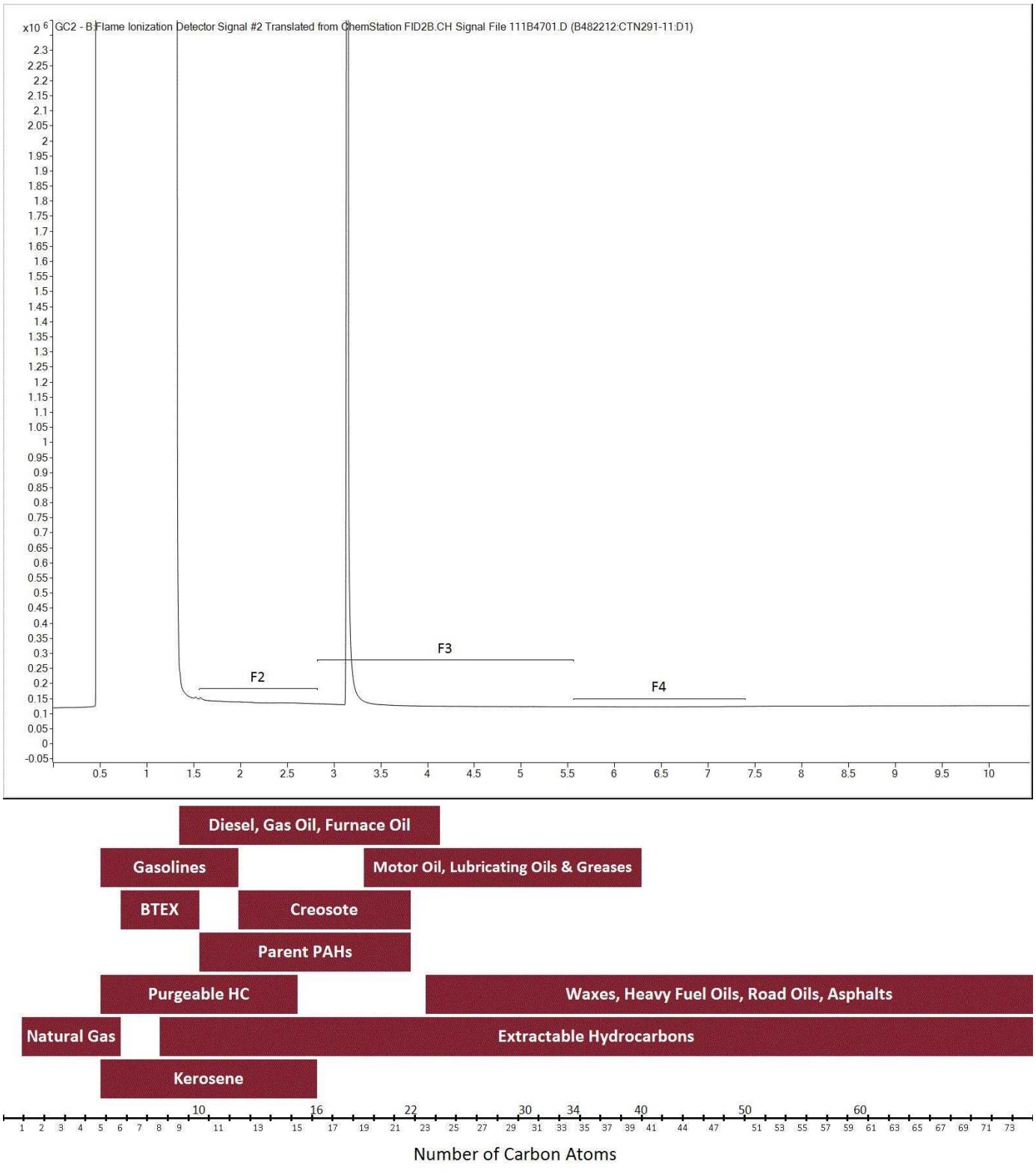


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C463460
Report Date: 2024/08/29
Bureau Veritas Sample: CTN291 Lab-Dup

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-07

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
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☑ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 299622

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☑ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.Haigh@worley.com
Ph: 587-897-6249	Ph: 587 897 6249
Sampler Name (Print): Stacy Gibb / Moo Nav Hari	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	ANALYSIS REQUESTED: VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☑ DIS ☑	MERCURY TOTAL ☑ DISSOLVED ☑	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	oil & grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (Total) TKN	Orthophosphate	Sulphur - total & dissolved	COD	Mercury total & PAH
1	AEMP-DS-06		X			18	2024/08/14	10:56	X		X	X								X	X					X			X	X	X	X	X	X	X
2	AEMP-DS-07		X			18	2024/08/14	11:52	X		X	X								X	X	X				X			X	X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

Limited Sample list

MCAL-2024-08-1897

C463460 MTG 8/16

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☑ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email Canada.chemistry@worley.com cdral-Iordata_track@worley.com Stacy.gibb@worley.com JES A260 1436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☑
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

	YES	NO	COOLER ID # MCAL			
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓		TEMP °C	6.4 (1)	5.2 (2)	6.4 (3)

	YES	NO	COOLER ID #			
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT			TEMP °C	1	2	3

	YES	NO	COOLER ID #			
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT			TEMP °C	1	2	3

LAB USE ONLY
MAXXAM JOB # C463460

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/08/15	10:00	1.	SIDJON SASO	2024/08/16	15:35
2.				2.			
3.				3.			

SAMPLES
LABELED BY: MTG
VERIFIED BY: GAS

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292211

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547083
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463963
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292211

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547083
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463963
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292211

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547083
Version: 1 - Final

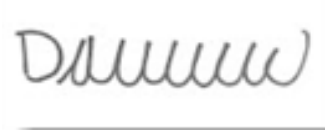
CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463963

Received: 2024/08/19, 12:54

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



Danielle Boisvert
Customer Solutions Representative
26 Aug 2024 21:10:00

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTQ351			CTQ351			CTQ352		
Sampling Date		2024/08/16 10:41			2024/08/16 10:41			2024/08/15 12:07		
COC Number		292211			292211			292211		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-09**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B482212				<0.10	0.10	B482212
Volatiles										
Benzene	mg/L	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491
Toluene	mg/L	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491
Ethylbenzene	mg/L	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491
m & p-Xylene	mg/L	<0.00080	0.00080	B485491	<0.00080	0.00080	B485491	<0.00080	0.00080	B485491
o-Xylene	mg/L	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491	<0.00040	0.00040	B485491
Xylenes (Total)	mg/L	<0.00089	0.00089	B484347				<0.00089	0.00089	B484347
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	B484347				<0.10	0.10	B484347
F1 (C6-C10)	mg/L	<0.10	0.10	B485491	<0.10	0.10	B485491	<0.10	0.10	B485491
Extraction Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	86		B482212				87		B482212
Instrument Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	98		B485491	99		B485491	101		B485491
4-Bromofluorobenzene (sur.)	%	112		B485491	107		B485491	111		B485491
D4-1,2-Dichloroethane (sur.)	%	89		B485491	90		B485491	91		B485491

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTQ351	CTQ352		
Sampling Date		2024/08/16 10:41	2024/08/15 12:07		
COC Number		292211	292211		
	UNITS	**AEMP-DS-04**	**AEMP-DS-09**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.42	0.33	0.20	B484639
Nutrients					
Total Nitrogen (N)	mg/L	0.48 (1)	0.38 (1)	0.20	B487833

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ351			CTQ351			CTQ352		
Sampling Date		2024/08/16 10:41			2024/08/16 10:41			2024/08/15 12:07		
COC Number		292211			292211			292211		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-09**	**RDL**	**QC Batch**
Elements										
Total Cadmium (Cd)	mg/L	0.00021	0.000020	B484349				0.000078	0.000020	B484349
Total Mercury (Hg)	ug/L	0.020 (1)	0.0038	B485575				<0.0019	0.0019	B485575
Total Aluminum (Al)	mg/L	3.0	0.0030	B490260	3.1	0.0030	B490260	1.2	0.0030	B490131
Total Antimony (Sb)	mg/L	<0.00060	0.00060	B490260	<0.00060	0.00060	B490260	<0.00060	0.00060	B490131
Total Arsenic (As)	mg/L	0.0029	0.00020	B490260	0.0027	0.00020	B490260	0.00088	0.00020	B490131
Total Barium (Ba)	mg/L	0.16	0.010	B490261	0.16	0.010	B490261	0.072	0.010	B490134
Total Beryllium (Be)	mg/L	<0.0010	0.0010	B490260	<0.0010	0.0010	B490260	<0.0010	0.0010	B490131
Total Boron (B)	mg/L	<0.020	0.020	B490261	<0.020	0.020	B490261	<0.020	0.020	B490134
Total Calcium (Ca)	mg/L	47	0.30	B490261	47	0.30	B490261	41	0.30	B490134
Total Chromium (Cr)	mg/L	0.0043	0.0010	B490260	0.0046	0.0010	B490260	0.0016	0.0010	B490131
Total Cobalt (Co)	mg/L	0.0031	0.00030	B490260	0.0031	0.00030	B490260	0.00086	0.00030	B490131
Total Copper (Cu)	mg/L	0.0064	0.0010	B490260	0.0064	0.0010	B490260	0.0023	0.0010	B490131
Total Iron (Fe)	mg/L	6.9	0.060	B490261	6.9	0.060	B490261	1.5	0.060	B490134
Total Lead (Pb)	mg/L	0.0035	0.00020	B490260	0.0035	0.00020	B490260	0.00080	0.00020	B490131
Total Lithium (Li)	mg/L	<0.020	0.020	B490261	<0.020	0.020	B490261	<0.020	0.020	B490134
Total Magnesium (Mg)	mg/L	15	0.20	B490261	15	0.20	B490261	12	0.20	B490134
Total Manganese (Mn)	mg/L	0.16	0.0040	B490261	0.16	0.0040	B490261	0.046	0.0040	B490134
Total Molybdenum (Mo)	mg/L	0.0015	0.00020	B490260	0.0014	0.00020	B490260	0.0011	0.00020	B490131
Total Nickel (Ni)	mg/L	0.0096	0.00050	B490260	0.0098	0.00050	B490260	0.0034	0.00050	B490131
Total Phosphorus (P)	mg/L	0.20	0.10	B490261	0.19	0.10	B490261	<0.10	0.10	B490134
Total Potassium (K)	mg/L	1.7	0.30	B490261	1.8	0.30	B490261	1.7	0.30	B490134
Total Selenium (Se)	mg/L	0.00048	0.00020	B490260	0.00048	0.00020	B490260	0.00049	0.00020	B490131
Total Silicon (Si)	mg/L	5.1	0.50	B490261	5.1	0.50	B490261	2.7	0.50	B490134
Total Silver (Ag)	mg/L	<0.00010	0.00010	B490260	<0.00010	0.00010	B490260	<0.00010	0.00010	B490131
Total Sodium (Na)	mg/L	8.0	0.50	B490261	8.0	0.50	B490261	19	0.50	B490134
Total Strontium (Sr)	mg/L	0.25	0.020	B490261	0.25	0.020	B490261	0.26	0.020	B490134
Total Sulphur (S)	mg/L	14	0.20	B490261	14	0.20	B490261	18	0.20	B490134
Total Thallium (Tl)	mg/L	<0.00020	0.00020	B490260	<0.00020	0.00020	B490260	<0.00020	0.00020	B490131
Total Tin (Sn)	mg/L	<0.0010	0.0010	B490260	<0.0010	0.0010	B490260	<0.0010	0.0010	B490131

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ351			CTQ351			CTQ352		
Sampling Date		2024/08/16 10:41			2024/08/16 10:41			2024/08/15 12:07		
COC Number		292211			292211			292211		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-09**	**RDL**	**QC Batch**
Total Titanium (Ti)	mg/L	0.033	0.0010	B490260	0.033	0.0010	B490260	0.032	0.0010	B490131
Total Uranium (U)	mg/L	0.0010	0.00010	B490260	0.0010	0.00010	B490260	0.0010	0.00010	B490131
Total Vanadium (V)	mg/L	0.0078	0.0010	B490260	0.0083	0.0010	B490260	0.0036	0.0010	B490131
Total Zinc (Zn)	mg/L	0.056 (1)	0.0030	B490260	0.043 (2)	0.0030	B490260	0.0086	0.0030	B490131

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ351			CTQ352		
Sampling Date		2024/08/16 10:41			2024/08/15 12:07		
COC Number		292211			292211		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-09**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L	120	0.50	B484352	160	0.50	B484352
Ion Balance (% Difference)	%	4.1	N/A	B484354	0.32	N/A	B484354
Nitrate (N)	mg/L	0.060	0.010	B484358	0.049	0.010	B484358
Nitrate (NO3)	mg/L	0.27	0.044	B484357	0.22	0.044	B484357
Nitrite (NO2)	mg/L	<0.033	0.033	B484357	<0.033	0.033	B484357
Sulphide (as H2S)	mg/L	0.015	0.0020	B484351	0.0068	0.0020	B484351
Demand Parameters							
Chemical Oxygen Demand	mg/L	36	10	B487785	20	10	B487785
Elements							
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B484348	<0.000020	0.000020	B484348
Misc. Inorganics							
Conductivity	uS/cm	290	2.0	B486769	340	2.0	B486769
Dissolved Organic Carbon (C)	mg/L	2.6	0.50	B486452	4.0	0.50	B491667
pH	pH	7.63	N/A	B486759	8.07	N/A	B486759
Total Organic Carbon (C)	mg/L	3.1	0.50	B486502	3.0	0.50	B491699
Total Dissolved Solids	mg/L	180	10	B487415	210	10	B485874
Total Suspended Solids	mg/L	750 (1)	1.5	B487438	38	1.0	B487431
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B486754	<1.0	1.0	B486754
Alkalinity (Total as CaCO3)	mg/L	94	1.0	B486754	110	1.0	B486754
Bicarbonate (HCO3)	mg/L	110	1.0	B486754	130	1.0	B486754
Carbonate (CO3)	mg/L	<1.0	1.0	B486754	<1.0	1.0	B486754
Hydroxide (OH)	mg/L	<1.0	1.0	B486754	<1.0	1.0	B486754
Total Sulphide	mg/L	0.014	0.0018	B484990	0.0063	0.0018	B484990
Chloride (Cl)	mg/L	8.7	1.0	B486504	8.2	1.0	B486504
Sulphate (SO4)	mg/L	44	1.0	B486504	55	1.0	B486504
Nutrients							
Total Ammonia (N)	mg/L	<0.015	0.015	B486876	<0.015	0.015	B486876
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486380	<0.0030	0.0030	B486380

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Detection limit raised based on sample volume used for analysis.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ351			CTQ352		
Sampling Date		2024/08/16 10:41			2024/08/15 12:07		
COC Number		292211			292211		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-09**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B486588	<0.010	0.010	B486588
Nitrate plus Nitrite (N)	mg/L	0.060	0.010	B486588	0.049	0.010	B486588
Misc. Organics							
Oil and grease	mg/L	<2.0	2.0	B485334	<2.0	2.0	B485334
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B485250	<2.0	2.0	B485250
Physical Properties							
True Colour	PtCo units	5.1	2.0	B486456	7.0	2.0	B486456
Physical Properties							
Turbidity	NTU	160	0.10	B485150	35	0.10	B485150
RDL = Reportable Detection Limit							

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ351	CTQ352		
Sampling Date		2024/08/16 10:41	2024/08/15 12:07		
COC Number		292211	292211		
	UNITS	**AEMP-DS-04**	**AEMP-DS-09**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B484359
Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B481343
Acridine	ug/L	<0.040	<0.040	0.040	B481343
Anthracene	ug/L	<0.010	<0.010	0.010	B481343
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B481343
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B481343
Fluoranthene	ug/L	<0.010	<0.010	0.010	B481343
Fluorene	ug/L	<0.050	<0.050	0.050	B481343
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B481343
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Perylene	ug/L	<0.050	<0.050	0.050	B481343
Pyrene	ug/L	<0.020	<0.020	0.020	B481343
Quinoline	ug/L	<0.20	<0.20	0.20	B481343
Retene	ug/L	<0.050	<0.050	0.050	B481343
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ351	CTQ352		
Sampling Date		2024/08/16 10:41	2024/08/15 12:07		
COC Number		292211	292211		
	UNITS	**AEMP-DS-04**	**AEMP-DS-09**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C2-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C3-fluorene	ug/L	<0.050	<0.050	0.050	B481343
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C2-dibenzothiophene	ug/L	0.023	<0.020	0.020	B481343
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	121	106		B481343
D8-ACENAPHTHYLENE (sur.)	%	93	86		B481343
D8-NAPHTHALENE (sur.)	%	82	84		B481343
TERPHENYL-D14 (sur.)	%	125	112		B481343
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTQ351	CTQ352		
Sampling Date		2024/08/16 10:41	2024/08/15 12:07		
COC Number		292211	292211		
	UNITS	**AEMP-DS-04**	**AEMP-DS-09**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B486672
RDL = Reportable Detection Limit					

Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ351			CTQ351			CTQ352		
Sampling Date		2024/08/16 10:41			2024/08/16 10:41			2024/08/15 12:07		
COC Number		292211			292211			292211		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-09**	**RDL**	**QC Batch**
Elements										
Dissolved Aluminum (Al)	mg/L	0.027	0.0030	B488054				0.054	0.0030	B488054
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	B488054				<0.00060	0.00060	B488054
Dissolved Arsenic (As)	mg/L	0.00040	0.00020	B488054				0.00031	0.00020	B488054
Dissolved Barium (Ba)	mg/L	0.053	0.010	B487128	0.051	0.010	B487128	0.052	0.010	B486815
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	B488054				<0.0010	0.0010	B488054
Dissolved Boron (B)	mg/L	0.022	0.020	B487128	<0.020	0.020	B487128	<0.020	0.020	B486815
Dissolved Calcium (Ca)	mg/L	32	0.30	B487128	33	0.30	B487128	43	0.30	B486815
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	B488054				<0.0010	0.0010	B488054
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00030	B488054				<0.00030	0.00030	B488054
Dissolved Copper (Cu)	mg/L	<0.0010	0.0010	B488054				0.0011	0.0010	B488054
Dissolved Iron (Fe)	mg/L	<0.060	0.060	B487128	<0.060	0.060	B487128	<0.060	0.060	B486815
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	B488054				0.00025	0.00020	B488054
Dissolved Lithium (Li)	mg/L	<0.020	0.020	B487128	<0.020	0.020	B487128	<0.020	0.020	B486815
Dissolved Magnesium (Mg)	mg/L	9.9	0.20	B487128	9.9	0.20	B487128	13	0.20	B486815
Dissolved Manganese (Mn)	mg/L	0.025	0.0040	B487128	0.023	0.0040	B487128	0.0072	0.0040	B486815
Dissolved Molybdenum (Mo)	mg/L	0.00094	0.00020	B488054				0.0012	0.00020	B488054
Dissolved Nickel (Ni)	mg/L	0.00094	0.00050	B488054				0.0013	0.00050	B488054
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	B487128	<0.10	0.10	B487128	<0.10	0.10	B486815
Dissolved Potassium (K)	mg/L	0.91	0.30	B487128	0.82	0.30	B487128	0.98	0.30	B486815
Dissolved Selenium (Se)	mg/L	0.00041	0.00020	B488054				0.00046	0.00020	B488054
Dissolved Silicon (Si)	mg/L	1.5	0.50	B487128	1.5	0.50	B487128	1.7	0.50	B486815
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	B488054				<0.00010	0.00010	B488054
Dissolved Sodium (Na)	mg/L	7.9	0.50	B487128	7.9	0.50	B487128	8.2	0.50	B486815
Dissolved Strontium (Sr)	mg/L	0.23	0.020	B487128	0.23	0.020	B487128	0.26	0.020	B486815
Dissolved Sulphur (S)	mg/L	14	0.20	B487128	14	0.20	B487128	19	0.20	B486815
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	B488054				<0.00020	0.00020	B488054
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	B488054				<0.0010	0.0010	B488054
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	B488054				<0.0010	0.0010	B488054
Dissolved Uranium (U)	mg/L	0.00078	0.00010	B488054				0.00097	0.00010	B488054
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	B488054				<0.0010	0.0010	B488054

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ351			CTQ351			CTQ352		
Sampling Date		2024/08/16 10:41			2024/08/16 10:41			2024/08/15 12:07		
COC Number		292211			292211			292211		
	UNITS	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-09**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	B488054				<0.0030	0.0030	B488054

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ351
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/20	Automated Statchk
Hardness	CALC	B484352	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486672	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B485575	2024/08/20	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B490261	2024/08/23	2024/08/24	Kristijan Kovac
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B490260	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484354	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486876	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B484357	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B484358	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B484990	N/A	2024/08/20	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B487415	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487833	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487438	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Turbidity	TURB	B485150	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ351 Dup
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly

Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ351 Dup
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B490261	2024/08/23	2024/08/24	Kristijan Kovac
Elements by ICPMS - Total	ICPM	B490260	2024/08/23	2024/08/24	Jason Bao

Bureau Veritas ID: CTQ352
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B491667	N/A	2024/08/26	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/20	Automated Statchk
Hardness	CALC	B484352	N/A	2024/08/21	Automated Statchk
Mercury (Dissolved) by CV	CV	B486672	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B485575	2024/08/20	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B486815	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B490134	2024/08/23	2024/08/25	Kristijan Kovac
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B490131	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484354	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486876	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B484357	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B484358	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B484990	N/A	2024/08/20	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B485874	2024/08/21	2024/08/22	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487833	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B491699	N/A	2024/08/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep

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Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ352
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Suspended Solids (NFR)	BAL	B487431	2024/08/22	2024/08/23	Haydee Estilong
Turbidity	TURB	B485150	N/A	2024/08/20	Amy Phan

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Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

GENERAL COMMENTS

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

Package 1	6.0°C

Sample CTQ351 [AEMP-DS-04] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CTQ352 [AEMP-DS-09] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CTQ351	AEMP-DS-04	Water	ICPMSABL-T	ELE	Zinc (Zn)	#7 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B481343	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/21		122	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		126	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		84	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		66	%	50 - 130
			Acenaphthene	2024/08/21	<0.10		ug/L	
			Acenaphthylene	2024/08/21	<0.10		ug/L	
			Acridine	2024/08/21	<0.040		ug/L	
			Anthracene	2024/08/21	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/21	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/21	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/21	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/21	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/21	<0.050		ug/L	
			Chrysene	2024/08/21	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/21	<0.0075		ug/L	
			Fluoranthene	2024/08/21	<0.010		ug/L	
			Fluorene	2024/08/21	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/21	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/21	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/21	<0.10		ug/L	
			Naphthalene	2024/08/21	<0.10		ug/L	
			Phenanthrene	2024/08/21	<0.050		ug/L	
			Perylene	2024/08/21	<0.050		ug/L	
			Pyrene	2024/08/21	<0.020		ug/L	
			Quinoline	2024/08/21	<0.20		ug/L	
			Retene	2024/08/21	<0.050		ug/L	
			C1-Naphthalene	2024/08/21	<0.10		ug/L	
			C3-Naphthalene	2024/08/21	<0.10		ug/L	
			C4-Naphthalene	2024/08/21	<0.10		ug/L	
			C2-Naphthalene	2024/08/21	<0.10		ug/L	
			Biphenyl	2024/08/21	<0.020		ug/L	
			C1-biphenyl	2024/08/21	<0.020		ug/L	
			C2-biphenyl	2024/08/21	<0.020		ug/L	
			C1-fluorene	2024/08/21	<0.050		ug/L	
			C2-fluorene	2024/08/21	<0.050		ug/L	
			C3-fluorene	2024/08/21	<0.050		ug/L	
			Dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/21	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/21	<0.10		ug/L	
B482212	BQU	Method Blank	O-TERPHENYL (sur.)	2024/08/21		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21	<0.10		mg/L	
B484990	LYV	Method Blank	Total Sulphide	2024/08/20	<0.0018		mg/L	
B485150	AP1	Method Blank	Turbidity	2024/08/20	<0.10		NTU	
B485250	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/26	<2.0		mg/L	
B485334	RRA	Method Blank	Oil and grease	2024/08/26	<2.0		mg/L	
B485491	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/21		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		110	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		91	%	50 - 140
			Benzene	2024/08/21	<0.00040		mg/L	
			Toluene	2024/08/21	<0.00040		mg/L	
			Ethylbenzene	2024/08/21	<0.00040		mg/L	
			m & p-Xylene	2024/08/21	<0.00080		mg/L	
			o-Xylene	2024/08/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/21	<0.10		mg/L	
B485575	KHU	Method Blank	Total Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B485874	HE1	Method Blank	Total Dissolved Solids	2024/08/22	<10		mg/L	
B486380	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486452	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486456	MOP	Method Blank	True Colour	2024/08/21	<2.0		PtCo units	
B486502	JYU	Method Blank	Total Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486504	TOR	Method Blank	Chloride (Cl)	2024/08/21	<1.0		mg/L	
			Sulphate (SO4)	2024/08/21	<1.0		mg/L	
B486588	AFI	Method Blank	Nitrite (N)	2024/08/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/21	<0.010		mg/L	
B486672	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486754	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/23	<1.0		mg/L	
			Carbonate (CO3)	2024/08/23	<1.0		mg/L	
			Hydroxide (OH)	2024/08/23	<1.0		mg/L	
B486769	AYE	Method Blank	Conductivity	2024/08/23	<2.0		uS/cm	
B486815	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B486876	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B487128	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	
B487415	TNY	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B487431	HE1	Method Blank	Total Suspended Solids	2024/08/23	<1.0		mg/L	
B487438	TNY	Method Blank	Total Suspended Solids	2024/08/23	<0.99		mg/L	
B487785	AP1	Method Blank	Chemical Oxygen Demand	2024/08/22	<10		mg/L	
B487833	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B488054	KH2	Method Blank	Dissolved Aluminum (Al)	2024/08/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/22	<0.0010		mg/L	
B490131	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	

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			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B490134	KKC	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B490260	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B490261	KKC	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B491667	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/26	<0.50		mg/L	
B491699	JYU	Method Blank	Total Organic Carbon (C)	2024/08/26	<0.50		mg/L	
B485491	RIL	RPD [CTQ351-11]	Benzene	2024/08/22	NC		%	30
			Toluene	2024/08/22	NC		%	30
			Ethylbenzene	2024/08/22	NC		%	30

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			m & p-Xylene	2024/08/22	NC		%	30
			o-Xylene	2024/08/22	NC		%	30
			F1 (C6-C10)	2024/08/22	NC		%	30
B487128	VSC	RPD [CTQ351-05]	Dissolved Iron (Fe)	2024/08/21	NC		%	20
			Dissolved Lithium (Li)	2024/08/21	NC		%	20
			Dissolved Magnesium (Mg)	2024/08/21	0.19		%	20
			Dissolved Manganese (Mn)	2024/08/21	7.4		%	20
			Dissolved Potassium (K)	2024/08/21	9.8		%	20
			Dissolved Sodium (Na)	2024/08/21	0.76		%	20
			Dissolved Strontium (Sr)	2024/08/21	0.080		%	20
			Dissolved Sulphur (S)	2024/08/21	0.0035		%	20
			Dissolved Phosphorus (P)	2024/08/21	NC		%	20
			Dissolved Barium (Ba)	2024/08/21	2.4		%	20
			Dissolved Silicon (Si)	2024/08/21	2.0		%	20
			Dissolved Boron (B)	2024/08/21	11		%	20
			Dissolved Calcium (Ca)	2024/08/21	1.0		%	20
B490260	JAB	RPD [CTQ351-06]	Total Aluminum (Al)	2024/08/24	2.5		%	20
			Total Chromium (Cr)	2024/08/24	5.4		%	20
			Total Cobalt (Co)	2024/08/24	0.78		%	20
			Total Copper (Cu)	2024/08/24	0.81		%	20
			Total Lead (Pb)	2024/08/24	0.80		%	20
			Total Antimony (Sb)	2024/08/24	NC		%	20
			Total Molybdenum (Mo)	2024/08/24	11		%	20
			Total Nickel (Ni)	2024/08/24	2.1		%	20
			Total Selenium (Se)	2024/08/24	0.29		%	20
			Total Silver (Ag)	2024/08/24	NC		%	20
			Total Arsenic (As)	2024/08/24	5.1		%	20
			Total Thallium (Tl)	2024/08/24	NC		%	20
			Total Tin (Sn)	2024/08/24	NC		%	20
			Total Titanium (Ti)	2024/08/24	0.27		%	20
			Total Uranium (U)	2024/08/24	2.7		%	20
			Total Vanadium (V)	2024/08/24	6.8		%	20
			Total Zinc (Zn)	2024/08/24	26 (1)		%	20
			Total Beryllium (Be)	2024/08/24	NC		%	20
B490261	KKC	RPD [CTQ351-06]	Total Iron (Fe)	2024/08/24	0.44		%	20
			Total Lithium (Li)	2024/08/24	NC		%	20
			Total Magnesium (Mg)	2024/08/24	1.2		%	20
			Total Manganese (Mn)	2024/08/24	0.88		%	20
			Total Potassium (K)	2024/08/24	2.1		%	20
			Total Sodium (Na)	2024/08/24	0.25		%	20
			Total Strontium (Sr)	2024/08/24	1.6		%	20
			Total Sulphur (S)	2024/08/24	0.20		%	20
			Total Phosphorus (P)	2024/08/24	5.3		%	20
			Total Barium (Ba)	2024/08/24	1.2		%	20
			Total Silicon (Si)	2024/08/24	0.19		%	20
			Total Boron (B)	2024/08/24	NC		%	20
			Total Calcium (Ca)	2024/08/24	0.43		%	20
B485250	RRA	Matrix Spike [CTQ352-08]	Total Petroleum Hydrocarbon	2024/08/26		92	%	70 - 130
B485334	RRA	Matrix Spike [CTQ352-08]	Oil and grease	2024/08/26		92	%	70 - 130
B485491	RIL	Matrix Spike [CTQ352-11]	1,4-Difluorobenzene (sur.)	2024/08/21		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		111	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		91	%	50 - 140

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			Benzene	2024/08/21		85	%	50 - 140
			Toluene	2024/08/21		85	%	50 - 140
			Ethylbenzene	2024/08/21		88	%	50 - 140
			m & p-Xylene	2024/08/21		88	%	50 - 140
			o-Xylene	2024/08/21		83	%	50 - 140
			F1 (C6-C10)	2024/08/21		103	%	60 - 140
B487128	VSC	Matrix Spike [CTQ351-05]	Dissolved Iron (Fe)	2024/08/21		102	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		93	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		98	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		102	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		94	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		91	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		97	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		103	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		103	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		101	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		95	%	80 - 120
			Dissolved Boron (B)	2024/08/21		92	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		92	%	80 - 120
B481343	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/21		110	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		76	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		60	%	50 - 130
			Acenaphthene	2024/08/21		75	%	50 - 130
			Acenaphthylene	2024/08/21		72	%	50 - 130
			Acridine	2024/08/21		87	%	50 - 130
			Anthracene	2024/08/21		82	%	50 - 130
			Benzo(a)anthracene	2024/08/21		89	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/21		91	%	50 - 130
			Benzo(k)fluoranthene	2024/08/21		105	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/21		86	%	50 - 130
			Benzo(c)phenanthrene	2024/08/21		91	%	50 - 130
			Benzo(a)pyrene	2024/08/21		89	%	50 - 130
			Benzo(e)pyrene	2024/08/21		83	%	50 - 130
			Chrysene	2024/08/21		98	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/21		92	%	50 - 130
			Fluoranthene	2024/08/21		93	%	50 - 130
			Fluorene	2024/08/21		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/21		82	%	50 - 130
			2-Methylnaphthalene	2024/08/21		69	%	50 - 130
			Naphthalene	2024/08/21		53	%	50 - 130
			Phenanthrene	2024/08/21		85	%	50 - 130
			Perylene	2024/08/21		85	%	50 - 130
			Pyrene	2024/08/21		93	%	50 - 130
			Quinoline	2024/08/21		98	%	50 - 130
			C1-Naphthalene	2024/08/21		44 (1)	%	50 - 130
			C3-Naphthalene	2024/08/21		72	%	50 - 130
			C2-Naphthalene	2024/08/21		54	%	50 - 130
			C1-biphenyl	2024/08/21		44 (1)	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/21		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/21		91	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/21		90	%	50 - 130

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			C2 benzo(a)anthracene/chrysene	2024/08/21		91	%	30 - 130
			1-Methylnaphthalene	2024/08/21		44 (1)	%	50 - 130
B482212	BQU	LCS	O-TERPHENYL (sur.)	2024/08/21		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		91	%	60 - 140
B484990	LYV	LCS	Total Sulphide	2024/08/20		101	%	80 - 120
B485150	AP1	LCS	Turbidity	2024/08/20		102	%	80 - 120
B485250	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/26		94	%	70 - 130
B485334	RRA	LCS	Oil and grease	2024/08/26		92	%	70 - 130
B485491	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/08/21		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		89	%	50 - 140
			Benzene	2024/08/21		84	%	60 - 130
			Toluene	2024/08/21		84	%	60 - 130
			Ethylbenzene	2024/08/21		87	%	60 - 130
			m & p-Xylene	2024/08/21		86	%	60 - 130
			o-Xylene	2024/08/21		82	%	60 - 130
			F1 (C6-C10)	2024/08/21		78	%	60 - 140
B485575	KHU	LCS	Total Mercury (Hg)	2024/08/22		92	%	80 - 120
B485874	HE1	LCS	Total Dissolved Solids	2024/08/22		101	%	80 - 120
B486380	MAP	LCS	Orthophosphate (P)	2024/08/21		100	%	80 - 120
B486452	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/21		101	%	80 - 120
B486456	MOP	LCS	True Colour	2024/08/21		94	%	80 - 120
B486502	JYU	LCS	Total Organic Carbon (C)	2024/08/21		99	%	80 - 120
B486504	TOR	LCS	Chloride (Cl)	2024/08/21		101	%	80 - 120
			Sulphate (SO4)	2024/08/21		100	%	80 - 120
B486588	AFI	LCS	Nitrite (N)	2024/08/21		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		102	%	80 - 120
B486672	KHU	LCS	Dissolved Mercury (Hg)	2024/08/22		90	%	80 - 120
B486754	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/23		102	%	80 - 120
B486759	AYE	LCS	pH	2024/08/23		100	%	97 - 103
B486769	AYE	LCS	Conductivity	2024/08/23		96	%	90 - 110
B486815	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		99	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		92	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		98	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		95	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		96	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		95	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		94	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		97	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		98	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		91	%	80 - 120
			Dissolved Boron (B)	2024/08/21		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		96	%	80 - 120
B486876	AFI	LCS	Total Ammonia (N)	2024/08/21		99	%	80 - 120
B487128	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		103	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		100	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		102	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		99	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		97	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		100	%	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 Sulphur (S)	2024/08/21		99	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		102	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		103	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		98	%	80 - 120
			Dissolved Boron (B)	2024/08/21		92	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		99	%	80 - 120
B487415	TNY	LCS	Total Dissolved Solids	2024/08/23		99	%	80 - 120
B487431	HE1	LCS	Total Suspended Solids	2024/08/23		99	%	80 - 120
B487438	TNY	LCS	Total Suspended Solids	2024/08/23		92	%	80 - 120
B487785	AP1	LCS	Chemical Oxygen Demand	2024/08/22		100	%	80 - 120
B487833	YL7	LCS	Total Nitrogen (N)	2024/08/22		105	%	80 - 120
B488054	KH2	LCS	Dissolved Aluminum (Al)	2024/08/23		109	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/23		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/23		103	%	80 - 120
			Dissolved Copper (Cu)	2024/08/23		105	%	80 - 120
			Dissolved Lead (Pb)	2024/08/23		101	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/23		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/23		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/23		102	%	80 - 120
			Dissolved Selenium (Se)	2024/08/23		110	%	80 - 120
			Dissolved Silver (Ag)	2024/08/23		102	%	80 - 120
			Dissolved Arsenic (As)	2024/08/23		108	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/23		99	%	80 - 120
			Dissolved Tin (Sn)	2024/08/23		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/23		101	%	80 - 120
			Dissolved Uranium (U)	2024/08/23		103	%	80 - 120
			Dissolved Vanadium (V)	2024/08/23		105	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/23		109	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/23		99	%	80 - 120
B490131	JAB	LCS	Total Aluminum (Al)	2024/08/24		106	%	80 - 120
			Total Chromium (Cr)	2024/08/24		90	%	80 - 120
			Total Cobalt (Co)	2024/08/24		91	%	80 - 120
			Total Copper (Cu)	2024/08/24		88	%	80 - 120
			Total Lead (Pb)	2024/08/24		98	%	80 - 120
			Total Antimony (Sb)	2024/08/24		101	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		98	%	80 - 120
			Total Nickel (Ni)	2024/08/24		89	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		94	%	80 - 120
			Total Arsenic (As)	2024/08/24		90	%	80 - 120
			Total Thallium (Tl)	2024/08/24		97	%	80 - 120
			Total Tin (Sn)	2024/08/24		102	%	80 - 120
			Total Titanium (Ti)	2024/08/24		89	%	80 - 120
			Total Uranium (U)	2024/08/24		99	%	80 - 120
			Total Vanadium (V)	2024/08/24		92	%	80 - 120
			Total Zinc (Zn)	2024/08/24		86	%	80 - 120
			Total Beryllium (Be)	2024/08/24		95	%	80 - 120
B490134	KKC	LCS	Total Iron (Fe)	2024/08/24		105	%	80 - 120
			Total Lithium (Li)	2024/08/24		92	%	80 - 120
			Total Magnesium (Mg)	2024/08/24		99	%	80 - 120
			Total Manganese (Mn)	2024/08/24		99	%	80 - 120
			Total Potassium (K)	2024/08/24		91	%	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
			Total Sodium (Na)	2024/08/24		91	%	80 - 120
			Total Strontium (Sr)	2024/08/24		98	%	80 - 120
			Total Sulphur (S)	2024/08/24		99	%	80 - 120
			Total Phosphorus (P)	2024/08/24		99	%	80 - 120
			Total Barium (Ba)	2024/08/24		99	%	80 - 120
			Total Silicon (Si)	2024/08/24		98	%	80 - 120
			Total Boron (B)	2024/08/24		89	%	80 - 120
			Total Calcium (Ca)	2024/08/24		93	%	80 - 120
B490260	JAB	LCS	Total Aluminum (Al)	2024/08/24		105	%	80 - 120
			Total Chromium (Cr)	2024/08/24		89	%	80 - 120
			Total Cobalt (Co)	2024/08/24		90	%	80 - 120
			Total Copper (Cu)	2024/08/24		87	%	80 - 120
			Total Lead (Pb)	2024/08/24		97	%	80 - 120
			Total Antimony (Sb)	2024/08/24		101	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		96	%	80 - 120
			Total Nickel (Ni)	2024/08/24		88	%	80 - 120
			Total Selenium (Se)	2024/08/24		88	%	80 - 120
			Total Silver (Ag)	2024/08/24		92	%	80 - 120
			Total Arsenic (As)	2024/08/24		89	%	80 - 120
			Total Thallium (Tl)	2024/08/24		96	%	80 - 120
			Total Tin (Sn)	2024/08/24		100	%	80 - 120
			Total Titanium (Ti)	2024/08/24		86	%	80 - 120
			Total Uranium (U)	2024/08/24		98	%	80 - 120
			Total Vanadium (V)	2024/08/24		92	%	80 - 120
			Total Zinc (Zn)	2024/08/24		84	%	80 - 120
			Total Beryllium (Be)	2024/08/24		93	%	80 - 120
B490261	KKC	LCS	Total Iron (Fe)	2024/08/24		104	%	80 - 120
			Total Lithium (Li)	2024/08/24		99	%	80 - 120
			Total Magnesium (Mg)	2024/08/24		99	%	80 - 120
			Total Manganese (Mn)	2024/08/24		102	%	80 - 120
			Total Potassium (K)	2024/08/24		99	%	80 - 120
			Total Sodium (Na)	2024/08/24		98	%	80 - 120
			Total Strontium (Sr)	2024/08/24		96	%	80 - 120
			Total Sulphur (S)	2024/08/24		94	%	80 - 120
			Total Phosphorus (P)	2024/08/24		97	%	80 - 120
			Total Barium (Ba)	2024/08/24		98	%	80 - 120
			Total Silicon (Si)	2024/08/24		100	%	80 - 120
			Total Boron (B)	2024/08/24		98	%	80 - 120
			Total Calcium (Ca)	2024/08/24		99	%	80 - 120
B491667	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/26		101	%	80 - 120
B491699	JYU	LCS	Total Organic Carbon (C)	2024/08/26		100	%	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
B487833	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

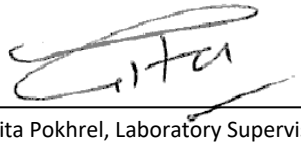
Bureau Veritas Job #: C463963
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

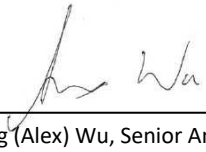
VALIDATION SIGNATURE PAGE

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

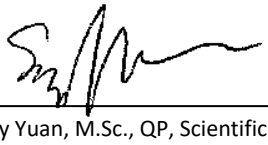
Elizabeth Chacko, Senior Analyst, Organics



Gita Pokhrel, Laboratory Supervisor



Qiliang (Alex) Wu, Senior Analyst



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

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
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Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

VALIDATION SIGNATURE PAGE(CONT'D)

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

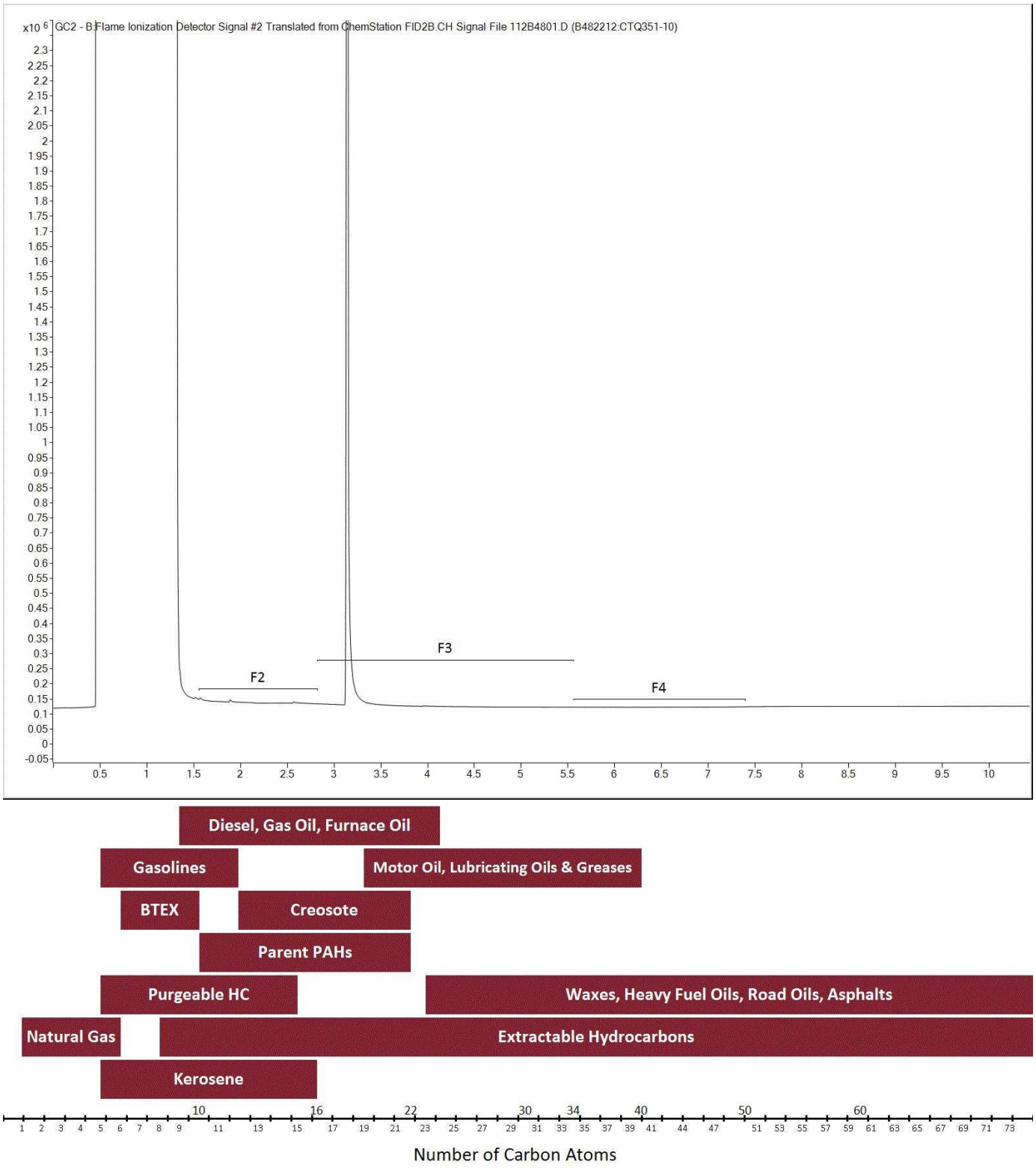
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C463963
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ351

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-04

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



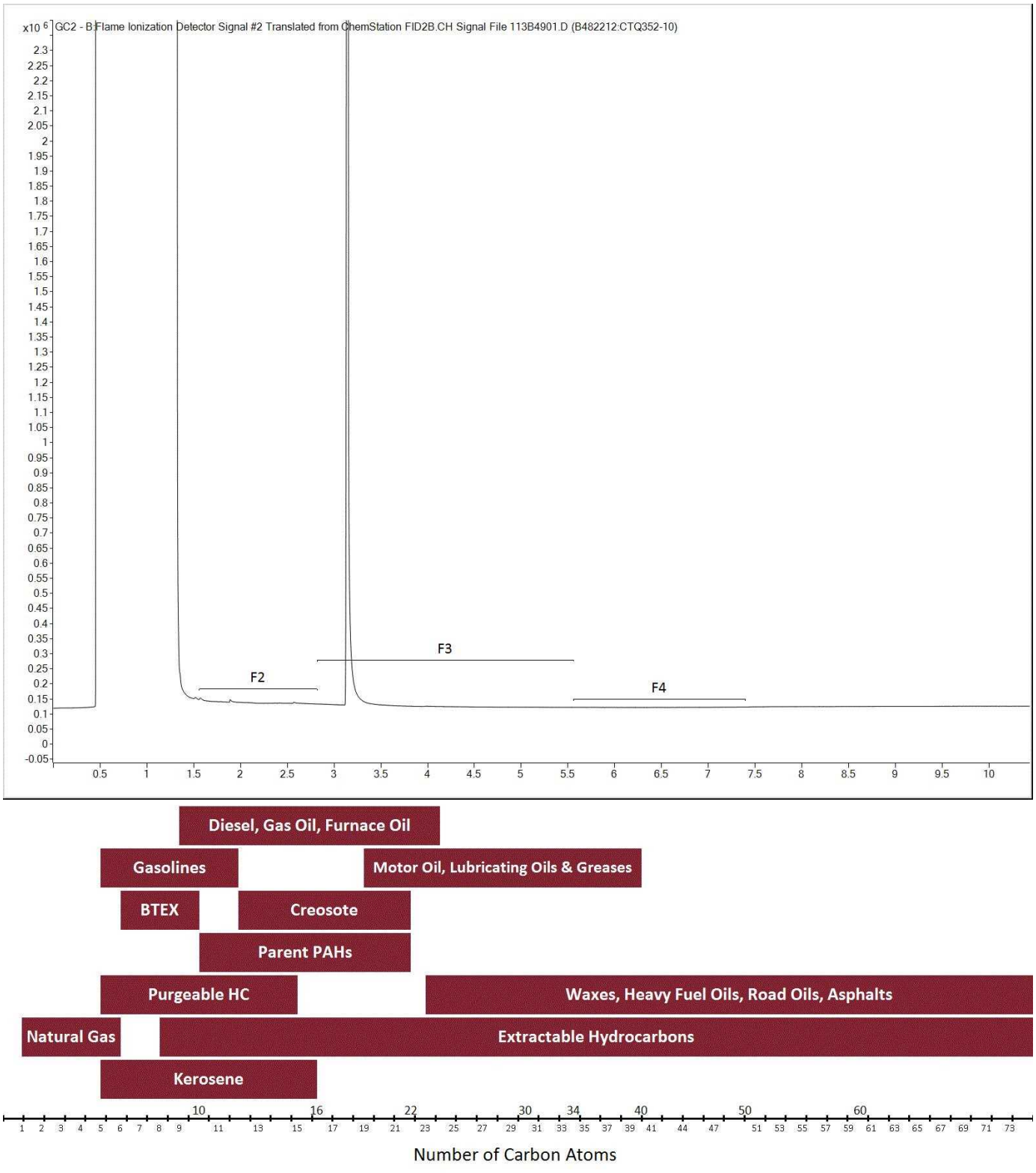
hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Bureau Veritas Job #: C463963
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ352

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-09

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Maxxam
A Bureau Veritas Group Company

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Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 292211

INVOICE INFORMATION

Company Name: ☒ Imperial Oil ☐ ExxonMobil
Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary AB T2C 3E7
Email: alex.haigh@worley.com
Ph: 587-897-6249
Sampler Name (Print): Stacy Gibb / Nav Hari

REPORT INFORMATION

Company Name: Worley
Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com
Ph: 587-897-6249
Consultant Project #: 417085-54419-24200

ANALYSIS REQUESTED

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	~~SALINITY SOIL~~ Ion Tool Simple	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	Oil and Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia, (Total) TKN	Orthophosphate	Sulphur - Total + dissolved	COD	alkylated, PAH, TPH
1	AEMP-DS-04		X			18	2024/08/16	10:41	X			X	X							X	X					X			X	X	X	X	X	X	X
2	AEMP-DS-09		X			~~18~~ 17	2024/08/15	12:07	X			X	X							X	X	X					X			X	X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

med2-2024-08-503
C

IOL SITE LOCATION: Norman Wells, NT
IOL PROJECT # (if applicable): 417085-54419-24200
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM:

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS:
Email :- Canada.chemistry@worley.com
Cc/al - IORdatatrack@worley.com
- Stacy.gibb@worley.com
IES A2601436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required:

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓			8	5	5
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID # MCAL	TEMP °C 1	2	3
SEAL PRESENT	✓			7.4	7.1	7.2
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C463963

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/08/18	10:10	1.	BRENTON MAH	2024/08/19	12:54
2.	BRENTON MAH	2024/08/19	18:00	2.	MAUDEEP PAL	2024/08/20	07:00
3.				3.			

SAMPLES
LABELED BY: SS
VERIFIED BY: AHQ

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419
Your C.O.C. #: 292216

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3546992
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463986
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	1	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	3	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	3		Auto Calc
Cadmium - low level CCME - Dissolved (1)	1		Auto Calc
Cadmium - low level CCME (Total) (1)	1		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	1	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	1	AB SOP-00016	SM 24 5220D m
True Colour (1)	1	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	1	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	1	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	3	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	1		Auto Calc
Hardness (1)	1		Auto Calc
Mercury (Dissolved) by CV (1, 4)	1	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	1	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	1	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	1	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	1	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	1	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	1		Auto Calc
Ammonia-N (Total) (1)	1	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	1		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	1	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	1		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	1	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	1	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	1	AB SOP-00080	SM 24 4500 S2-A D Fm

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Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419
Your C.O.C. #: 292216

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3546992
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463986
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	1	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	1	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	1	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	1	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	1	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	1	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

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Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419
Your C.O.C. #: 292216

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3546992
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463986

Received: 2024/08/19, 12:54

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
26 Aug 2024 15:04:49

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C463986
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTQ406		CTQ407		CTQ408		
Sampling Date		2024/08/16 09:03		2024/08/16 09:03				
COC Number		292216		292216		292216		
	UNITS	**AEMP-US-03**	**QC Batch**	**AEMP-DUP 3-(FIELD BLANK)**	**QC Batch**	**AEMP-DUP 4-TRIP BLANK**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	B482212	<0.10	B484100	<0.10	0.10	B482212
Volatiles								
Benzene	mg/L	<0.00040	B485491	<0.00040	B485491	<0.00040	0.00040	B485491
Toluene	mg/L	<0.00040	B485491	<0.00040	B485491	<0.00040	0.00040	B485491
Ethylbenzene	mg/L	<0.00040	B485491	<0.00040	B485491	<0.00040	0.00040	B485491
m & p-Xylene	mg/L	<0.00080	B485491	<0.00080	B485491	<0.00080	0.00080	B485491
o-Xylene	mg/L	<0.00040	B485491	<0.00040	B485491	<0.00040	0.00040	B485491
Xylenes (Total)	mg/L	<0.00089	B484347	<0.00089	B484347	<0.00089	0.00089	B484347
F1 (C6-C10) - BTEX	mg/L	<0.10	B484347	<0.10	B484347	<0.10	0.10	B484347
F1 (C6-C10)	mg/L	<0.10	B485491	<0.10	B485491	<0.10	0.10	B485491
Extraction Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	86	B482212	83	B484100	87		B482212
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	101	B485491	98	B485491	101		B485491
4-Bromofluorobenzene (sur.)	%	110	B485491	110	B485491	110		B485491
D4-1,2-Dichloroethane (sur.)	%	91	B485491	91	B485491	93		B485491

RDL = Reportable Detection Limit

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTQ406		
Sampling Date		2024/08/16 09:03		
COC Number		292216		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**
Calculated Parameters				
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.45	0.20	B484639
Nutrients				
Total Nitrogen (N)	mg/L	0.51 (1)	0.20	B487800

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Advisian
Task Order#: 417085-54419
Site#: N/A
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Project #: 417085-54419

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ406		
Sampling Date		2024/08/16 09:03		
COC Number		292216		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**
Elements				
Total Cadmium (Cd)	mg/L	0.00044	0.000080	B484349
Total Mercury (Hg)	ug/L	0.021	0.0019	B485575
Total Aluminum (Al)	mg/L	6.3	0.012	B490131
Total Antimony (Sb)	mg/L	<0.0024	0.0024	B490131
Total Arsenic (As)	mg/L	0.0066	0.00080	B490131
Total Barium (Ba)	mg/L	0.24	0.010	B490134
Total Beryllium (Be)	mg/L	<0.0040	0.0040	B490131
Total Boron (B)	mg/L	0.024	0.020	B490134
Total Calcium (Ca)	mg/L	57	0.30	B490134
Total Chromium (Cr)	mg/L	0.011	0.0040	B490131
Total Cobalt (Co)	mg/L	0.0076	0.0012	B490131
Total Copper (Cu)	mg/L	0.015	0.0040	B490131
Total Iron (Fe)	mg/L	15	0.060	B490134
Total Lead (Pb)	mg/L	0.0072	0.00080	B490131
Total Lithium (Li)	mg/L	<0.020	0.020	B490134
Total Magnesium (Mg)	mg/L	18	0.20	B490134
Total Manganese (Mn)	mg/L	0.31	0.0040	B490134
Total Molybdenum (Mo)	mg/L	0.0019	0.00080	B490131
Total Nickel (Ni)	mg/L	0.021	0.0020	B490131
Total Phosphorus (P)	mg/L	0.36	0.10	B490134
Total Potassium (K)	mg/L	3.4	0.30	B490134
Total Selenium (Se)	mg/L	0.00099	0.00080	B490131
Total Silicon (Si)	mg/L	9.3	0.50	B490134
Total Silver (Ag)	mg/L	<0.00040	0.00040	B490131
Total Sodium (Na)	mg/L	8.1	0.50	B490134
Total Strontium (Sr)	mg/L	0.28	0.020	B490134
Total Sulphur (S)	mg/L	14	0.20	B490134
Total Thallium (Tl)	mg/L	<0.00080	0.00080	B490131
Total Tin (Sn)	mg/L	<0.0040	0.0040	B490131
Total Titanium (Ti)	mg/L	0.066	0.0040	B490131
Total Uranium (U)	mg/L	0.0013	0.00040	B490131
RDL = Reportable Detection Limit				

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ406		
Sampling Date		2024/08/16 09:03		
COC Number		292216		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.019	0.0040	B490131
Total Zinc (Zn)	mg/L	0.24	0.012	B490131
RDL = Reportable Detection Limit				

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Bureau Veritas Job #: C463986
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ406			CTQ406		
Sampling Date		2024/08/16 09:03			2024/08/16 09:03		
COC Number		292216			292216		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**	**AEMP-US-03 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L	120	0.50	B484352			
Ion Balance (% Difference)	%	4.3	N/A	B484354			
Nitrate (N)	mg/L	0.063	0.010	B484358			
Nitrate (NO3)	mg/L	0.28	0.044	B484357			
Nitrite (NO2)	mg/L	<0.033	0.033	B484357			
Sulphide (as H2S)	mg/L	0.052	0.0040	B484351			
Demand Parameters							
Chemical Oxygen Demand	mg/L	55	10	B487785			
Elements							
Dissolved Cadmium (Cd)	mg/L	0.000041	0.000020	B484348			
Misc. Inorganics							
Conductivity	uS/cm	290	2.0	B486769			
Dissolved Organic Carbon (C)	mg/L	2.8	0.50	B486452	2.7	0.50	B486452
pH	pH	7.60	N/A	B486759			
Total Organic Carbon (C)	mg/L	2.8	0.50	B486502			
Total Dissolved Solids	mg/L	170	10	B487415			
Total Suspended Solids	mg/L	480 (1)	1.5	B487438			
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B486754			
Alkalinity (Total as CaCO3)	mg/L	96	1.0	B486754			
Bicarbonate (HCO3)	mg/L	120	1.0	B486754			
Carbonate (CO3)	mg/L	<1.0	1.0	B486754			
Hydroxide (OH)	mg/L	<1.0	1.0	B486754			
Total Sulphide	mg/L	0.049 (2)	0.0036	B486259			
Chloride (Cl)	mg/L	8.7	1.0	B486504			
Sulphate (SO4)	mg/L	44	1.0	B486504			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Detection limit raised based on sample volume used for analysis.
(2) Detection limits raised due to sample matrix.

Bureau Veritas Job #: C463986
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ406			CTQ406		
Sampling Date		2024/08/16 09:03			2024/08/16 09:03		
COC Number		292216			292216		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**	**AEMP-US-03 Lab-Dup**	**RDL**	**QC Batch**
Nutrients							
Total Ammonia (N)	mg/L	0.017	0.015	B486864			
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486380	<0.0030	0.0030	B486380
Nitrite (N)	mg/L	<0.010	0.010	B486588			
Nitrate plus Nitrite (N)	mg/L	0.063	0.010	B486588			
Misc. Organics							
Oil and grease	mg/L	<2.0	2.0	B485334			
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B485250			
Physical Properties							
True Colour	PtCo units	6.4	2.0	B486456			
Physical Properties							
Turbidity	NTU	190	0.10	B485150			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CTQ408	CTQ408		
Sampling Date					
COC Number		292216	292216		
	UNITS	**AEMP-DUP 4-TRIP BLANK**	**AEMP-DUP 4-TRIP BLANK Lab-Dup**	**RDL**	**QC Batch**
Misc. Organics					
Oil and grease	mg/L	<2.0	<2.0	2.0	B485334
Total Petroleum Hydrocarbon	mg/L	<2.0	<2.0	2.0	B485250

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ406	CTQ408		
Sampling Date		2024/08/16 09:03			
COC Number		292216	292216		
	UNITS	**AEMP-US-03**	**AEMP-DUP 4-TRIP BLANK**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B484359
Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B481343
Acridine	ug/L	<0.040	<0.040	0.040	B481343
Anthracene	ug/L	<0.010	<0.010	0.010	B481343
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B481343
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B481343
Fluoranthene	ug/L	<0.010	<0.010	0.010	B481343
Fluorene	ug/L	<0.050	<0.050	0.050	B481343
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B481343
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Perylene	ug/L	<0.050	<0.050	0.050	B481343
Pyrene	ug/L	<0.020	<0.020	0.020	B481343
Quinoline	ug/L	<0.20	<0.20	0.20	B481343
Retene	ug/L	<0.050	<0.050	0.050	B481343
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Biphenyl	ug/L	<0.020	<0.020	0.020	B481343
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ406	CTQ408		
Sampling Date		2024/08/16 09:03			
COC Number		292216	292216		
	UNITS	**AEMP-US-03**	**AEMP-DUP 4-TRIP BLANK**	**RDL**	**QC Batch**
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C2-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C3-fluorene	ug/L	<0.050	<0.050	0.050	B481343
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	113	118		B481343
D8-ACENAPHTHYLENE (sur.)	%	88	93		B481343
D8-NAPHTHALENE (sur.)	%	80	85		B481343
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ406	CTQ408		
Sampling Date		2024/08/16 09:03			
COC Number		292216	292216		
	UNITS	**AEMP-US-03**	**AEMP-DUP 4-TRIP BLANK**	**RDL**	**QC Batch**
TERPHENYL-D14 (sur.)	%	117	122		B481343
RDL = Reportable Detection Limit					

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTQ406		
Sampling Date		2024/08/16 09:03		
COC Number		292216		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**
Elements				
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	B486672
RDL = Reportable Detection Limit				

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ406		
Sampling Date		2024/08/16 09:03		
COC Number		292216		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**
Elements				
Dissolved Aluminum (Al)	mg/L	0.027	0.0030	B488054
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	B488054
Dissolved Arsenic (As)	mg/L	0.00042	0.00020	B488054
Dissolved Barium (Ba)	mg/L	0.052	0.010	B487128
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	B488054
Dissolved Boron (B)	mg/L	<0.020	0.020	B487128
Dissolved Calcium (Ca)	mg/L	33	0.30	B487128
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	B488054
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00030	B488054
Dissolved Copper (Cu)	mg/L	0.0011	0.0010	B488054
Dissolved Iron (Fe)	mg/L	<0.060	0.060	B487128
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	B488054
Dissolved Lithium (Li)	mg/L	<0.020	0.020	B487128
Dissolved Magnesium (Mg)	mg/L	10	0.20	B487128
Dissolved Manganese (Mn)	mg/L	0.021	0.0040	B487128
Dissolved Molybdenum (Mo)	mg/L	0.00098	0.00020	B488054
Dissolved Nickel (Ni)	mg/L	0.0011	0.00050	B488054
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	B487128
Dissolved Potassium (K)	mg/L	0.76	0.30	B487128
Dissolved Selenium (Se)	mg/L	0.00038	0.00020	B488054
Dissolved Silicon (Si)	mg/L	1.5	0.50	B487128
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	B488054
Dissolved Sodium (Na)	mg/L	7.9	0.50	B487128
Dissolved Strontium (Sr)	mg/L	0.23	0.020	B487128
Dissolved Sulphur (S)	mg/L	14	0.20	B487128
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	B488054
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	B488054
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	B488054
Dissolved Uranium (U)	mg/L	0.00082	0.00010	B488054
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	B488054
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	B488054
RDL = Reportable Detection Limit				

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Bureau Veritas Job #: C463986
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CTQ406
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B484352	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486672	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B485575	2024/08/20	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B490134	2024/08/23	2024/08/25	Kristijan Kovac
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B490131	2024/08/23	2024/08/25	Jason Bao
Ion Balance	CALC	B484354	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486864	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B484357	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B484358	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B487415	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487438	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Turbidity	TURB	B485150	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ406 Dup
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen

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Bureau Veritas Job #: C463986
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CTQ406 Dup
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz

Bureau Veritas ID: CTQ407
Sample ID: AEMP-DUP 3- (FIELD BLANK)
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/21	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B484100	2024/08/21	2024/08/21	Skye (Chuhan) Huang

Bureau Veritas ID: CTQ408
Sample ID: AEMP-DUP 4-TRIP BLANK
Matrix: Water

Collected:
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/21	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep

Bureau Veritas ID: CTQ408 Dup
Sample ID: AEMP-DUP 4-TRIP BLANK
Matrix: Water

Collected:
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep

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GENERAL COMMENTS

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

Package 1	3.7°C

Note: C of C information incomplete.For sample ID: AEMP-DUP 4-Trip Blank the sampling dating and time is not mentioned on the Chain of custody form. Proceed; notified Alex Haigh via email.

Sample CTQ406 [AEMP-US-03] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER) Comments

Sample CTQ406 [AEMP-US-03] Elements by ICPMS - Total: Detection limits raised due to matrix interference.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B481343	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/21		122	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		126	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		84	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		66	%	50 - 130
			Acenaphthene	2024/08/21	<0.10		ug/L	
			Acenaphthylene	2024/08/21	<0.10		ug/L	
			Acridine	2024/08/21	<0.040		ug/L	
			Anthracene	2024/08/21	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/21	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/21	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/21	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/21	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/21	<0.050		ug/L	
			Chrysene	2024/08/21	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/21	<0.0075		ug/L	
			Fluoranthene	2024/08/21	<0.010		ug/L	
			Fluorene	2024/08/21	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/21	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/21	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/21	<0.10		ug/L	
			Naphthalene	2024/08/21	<0.10		ug/L	
			Phenanthrene	2024/08/21	<0.050		ug/L	
			Perylene	2024/08/21	<0.050		ug/L	
			Pyrene	2024/08/21	<0.020		ug/L	
			Quinoline	2024/08/21	<0.20		ug/L	
			Retene	2024/08/21	<0.050		ug/L	
			C1-Naphthalene	2024/08/21	<0.10		ug/L	
			C3-Naphthalene	2024/08/21	<0.10		ug/L	
			C4-Naphthalene	2024/08/21	<0.10		ug/L	
			C2-Naphthalene	2024/08/21	<0.10		ug/L	
			Biphenyl	2024/08/21	<0.020		ug/L	
			C1-biphenyl	2024/08/21	<0.020		ug/L	
			C2-biphenyl	2024/08/21	<0.020		ug/L	
			C1-fluorene	2024/08/21	<0.050		ug/L	
			C2-fluorene	2024/08/21	<0.050		ug/L	
			C3-fluorene	2024/08/21	<0.050		ug/L	
			Dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/21	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/21	<0.10		ug/L	
B482212	BQU	Method Blank	O-TERPHENYL (sur.)	2024/08/21		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21	<0.10		mg/L	
B484100	CHA	Method Blank	O-TERPHENYL (sur.)	2024/08/21		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21	<0.10		mg/L	
B485150	AP1	Method Blank	Turbidity	2024/08/20	<0.10		NTU	
B485250	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/26	<2.0		mg/L	
B485334	RRA	Method Blank	Oil and grease	2024/08/26	<2.0		mg/L	
B485491	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/21		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		110	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		91	%	50 - 140
			Benzene	2024/08/21	<0.00040		mg/L	
			Toluene	2024/08/21	<0.00040		mg/L	
			Ethylbenzene	2024/08/21	<0.00040		mg/L	
			m & p-Xylene	2024/08/21	<0.00080		mg/L	
			o-Xylene	2024/08/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/21	<0.10		mg/L	
B485575	KHU	Method Blank	Total Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486259	LYV	Method Blank	Total Sulphide	2024/08/21	<0.0018		mg/L	
B486380	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486452	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486456	MOP	Method Blank	True Colour	2024/08/21	<2.0		PtCo units	
B486502	JYU	Method Blank	Total Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486504	TOR	Method Blank	Chloride (Cl)	2024/08/21	<1.0		mg/L	
			Sulphate (SO4)	2024/08/21	<1.0		mg/L	
B486588	AFI	Method Blank	Nitrite (N)	2024/08/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/21	<0.010		mg/L	
B486672	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486754	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/23	<1.0		mg/L	
			Carbonate (CO3)	2024/08/23	<1.0		mg/L	
			Hydroxide (OH)	2024/08/23	<1.0		mg/L	
B486769	AYE	Method Blank	Conductivity	2024/08/23	<2.0		uS/cm	
B486864	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B487128	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	
B487415	TNY	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B487438	TNY	Method Blank	Total Suspended Solids	2024/08/23	<0.99		mg/L	
B487785	AP1	Method Blank	Chemical Oxygen Demand	2024/08/22	<10		mg/L	
B487800	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B488054	KH2	Method Blank	Dissolved Aluminum (Al)	2024/08/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/22	<0.0010		mg/L	
B490131	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B490134	KKC	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B486380	MAP	RPD [CTQ406-06]	Orthophosphate (P)	2024/08/21	NC		%	20
B486452	JYU	RPD [CTQ406-10]	Dissolved Organic Carbon (C)	2024/08/21	2.8		%	20
B485250	RRA	RPD [CTQ408-04]	Total Petroleum Hydrocarbon	2024/08/26	NC		%	30
B485334	RRA	RPD [CTQ408-04]	Oil and grease	2024/08/26	NC		%	30
B486380	MAP	Matrix Spike [CTQ406-06]	Orthophosphate (P)	2024/08/21		101	%	80 - 120
B486452	JYU	Matrix Spike [CTQ406-10]	Dissolved Organic Carbon (C)	2024/08/21		91	%	75 - 125
B481343	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/21		110	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		76	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		60	%	50 - 130
			Acenaphthene	2024/08/21		75	%	50 - 130
			Acenaphthylene	2024/08/21		72	%	50 - 130
			Acridine	2024/08/21		87	%	50 - 130
			Anthracene	2024/08/21		82	%	50 - 130
			Benzo(a)anthracene	2024/08/21		89	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/21		91	%	50 - 130
			Benzo(k)fluoranthene	2024/08/21		105	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/21		86	%	50 - 130
			Benzo(c)phenanthrene	2024/08/21		91	%	50 - 130
			Benzo(a)pyrene	2024/08/21		89	%	50 - 130
			Benzo(e)pyrene	2024/08/21		83	%	50 - 130
			Chrysene	2024/08/21		98	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/21		92	%	50 - 130
			Fluoranthene	2024/08/21		93	%	50 - 130
			Fluorene	2024/08/21		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/21		82	%	50 - 130
			2-Methylnaphthalene	2024/08/21		69	%	50 - 130
			Naphthalene	2024/08/21		53	%	50 - 130
			Phenanthrene	2024/08/21		85	%	50 - 130
			Perylene	2024/08/21		85	%	50 - 130
			Pyrene	2024/08/21		93	%	50 - 130
			Quinoline	2024/08/21		98	%	50 - 130
			C1-Naphthalene	2024/08/21		44 (1)	%	50 - 130
			C3-Naphthalene	2024/08/21		72	%	50 - 130
			C2-Naphthalene	2024/08/21		54	%	50 - 130
			C1-biphenyl	2024/08/21		44 (1)	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/21		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/21		91	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/21		90	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/21		91	%	30 - 130
			1-Methylnaphthalene	2024/08/21		44 (1)	%	50 - 130
B482212	BQU	LCS	O-TERPHENYL (sur.)	2024/08/21		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		91	%	60 - 140
B484100	CHA	LCS	O-TERPHENYL (sur.)	2024/08/21		92	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		89	%	60 - 140
B485150	AP1	LCS	Turbidity	2024/08/20		102	%	80 - 120
B485250	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/26		94	%	70 - 130
B485334	RRA	LCS	Oil and grease	2024/08/26		92	%	70 - 130
B485491	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/08/21		95	%	50 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			4-Bromofluorobenzene (sur.)	2024/08/21		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		89	%	50 - 140
			Benzene	2024/08/21		84	%	60 - 130
			Toluene	2024/08/21		84	%	60 - 130
			Ethylbenzene	2024/08/21		87	%	60 - 130
			m & p-Xylene	2024/08/21		86	%	60 - 130
			o-Xylene	2024/08/21		82	%	60 - 130
			F1 (C6-C10)	2024/08/21		78	%	60 - 140
B485575	KHU	LCS	Total Mercury (Hg)	2024/08/22		92	%	80 - 120
B486259	LYV	LCS	Total Sulphide	2024/08/21		105	%	80 - 120
B486380	MAP	LCS	Orthophosphate (P)	2024/08/21		100	%	80 - 120
B486452	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/21		101	%	80 - 120
B486456	MOP	LCS	True Colour	2024/08/21		94	%	80 - 120
B486502	JYU	LCS	Total Organic Carbon (C)	2024/08/21		99	%	80 - 120
B486504	TOR	LCS	Chloride (Cl)	2024/08/21		101	%	80 - 120
			Sulphate (SO4)	2024/08/21		100	%	80 - 120
B486588	AFI	LCS	Nitrite (N)	2024/08/21		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		102	%	80 - 120
B486672	KHU	LCS	Dissolved Mercury (Hg)	2024/08/22		90	%	80 - 120
B486754	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/23		102	%	80 - 120
B486759	AYE	LCS	pH	2024/08/23		100	%	97 - 103
B486769	AYE	LCS	Conductivity	2024/08/23		96	%	90 - 110
B486864	AFI	LCS	Total Ammonia (N)	2024/08/21		102	%	80 - 120
B487128	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		103	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		100	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		102	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		99	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		97	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		100	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		99	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		102	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		103	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		98	%	80 - 120
			Dissolved Boron (B)	2024/08/21		92	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		99	%	80 - 120
B487415	TNY	LCS	Total Dissolved Solids	2024/08/23		99	%	80 - 120
B487438	TNY	LCS	Total Suspended Solids	2024/08/23		92	%	80 - 120
B487785	AP1	LCS	Chemical Oxygen Demand	2024/08/22		100	%	80 - 120
B487800	YL7	LCS	Total Nitrogen (N)	2024/08/22		107	%	80 - 120
B488054	KH2	LCS	Dissolved Aluminum (Al)	2024/08/23		109	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/23		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/23		103	%	80 - 120
			Dissolved Copper (Cu)	2024/08/23		105	%	80 - 120
			Dissolved Lead (Pb)	2024/08/23		101	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/23		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/23		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/23		102	%	80 - 120
			Dissolved Selenium (Se)	2024/08/23		110	%	80 - 120
			Dissolved Silver (Ag)	2024/08/23		102	%	80 - 120
			Dissolved Arsenic (As)	2024/08/23		108	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/23		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 Tin (Sn)	2024/08/23		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/23		101	%	80 - 120
			Dissolved Uranium (U)	2024/08/23		103	%	80 - 120
			Dissolved Vanadium (V)	2024/08/23		105	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/23		109	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/23		99	%	80 - 120
B490131	JAB	LCS	Total Aluminum (Al)	2024/08/24		106	%	80 - 120
			Total Chromium (Cr)	2024/08/24		90	%	80 - 120
			Total Cobalt (Co)	2024/08/24		91	%	80 - 120
			Total Copper (Cu)	2024/08/24		88	%	80 - 120
			Total Lead (Pb)	2024/08/24		98	%	80 - 120
			Total Antimony (Sb)	2024/08/24		101	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		98	%	80 - 120
			Total Nickel (Ni)	2024/08/24		89	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		94	%	80 - 120
			Total Arsenic (As)	2024/08/24		90	%	80 - 120
			Total Thallium (Tl)	2024/08/24		97	%	80 - 120
			Total Tin (Sn)	2024/08/24		102	%	80 - 120
			Total Titanium (Ti)	2024/08/24		89	%	80 - 120
			Total Uranium (U)	2024/08/24		99	%	80 - 120
			Total Vanadium (V)	2024/08/24		92	%	80 - 120
			Total Zinc (Zn)	2024/08/24		86	%	80 - 120
			Total Beryllium (Be)	2024/08/24		95	%	80 - 120
B490134	KKC	LCS	Total Iron (Fe)	2024/08/24		105	%	80 - 120
			Total Lithium (Li)	2024/08/24		92	%	80 - 120
			Total Magnesium (Mg)	2024/08/24		99	%	80 - 120
			Total Manganese (Mn)	2024/08/24		99	%	80 - 120
			Total Potassium (K)	2024/08/24		91	%	80 - 120
			Total Sodium (Na)	2024/08/24		91	%	80 - 120
			Total Strontium (Sr)	2024/08/24		98	%	80 - 120
			Total Sulphur (S)	2024/08/24		99	%	80 - 120
			Total Phosphorus (P)	2024/08/24		99	%	80 - 120
			Total Barium (Ba)	2024/08/24		99	%	80 - 120
			Total Silicon (Si)	2024/08/24		98	%	80 - 120
			Total Boron (B)	2024/08/24		89	%	80 - 120
			Total Calcium (Ca)	2024/08/24		93	%	80 - 120
B487800	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C463986
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419

VALIDATION SIGNATURE PAGE

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

Elizabeth Chacko, Senior Analyst, Organics

Gita Pokhrel, Laboratory Supervisor

Qiliang (Alex) Wu, Senior Analyst

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

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

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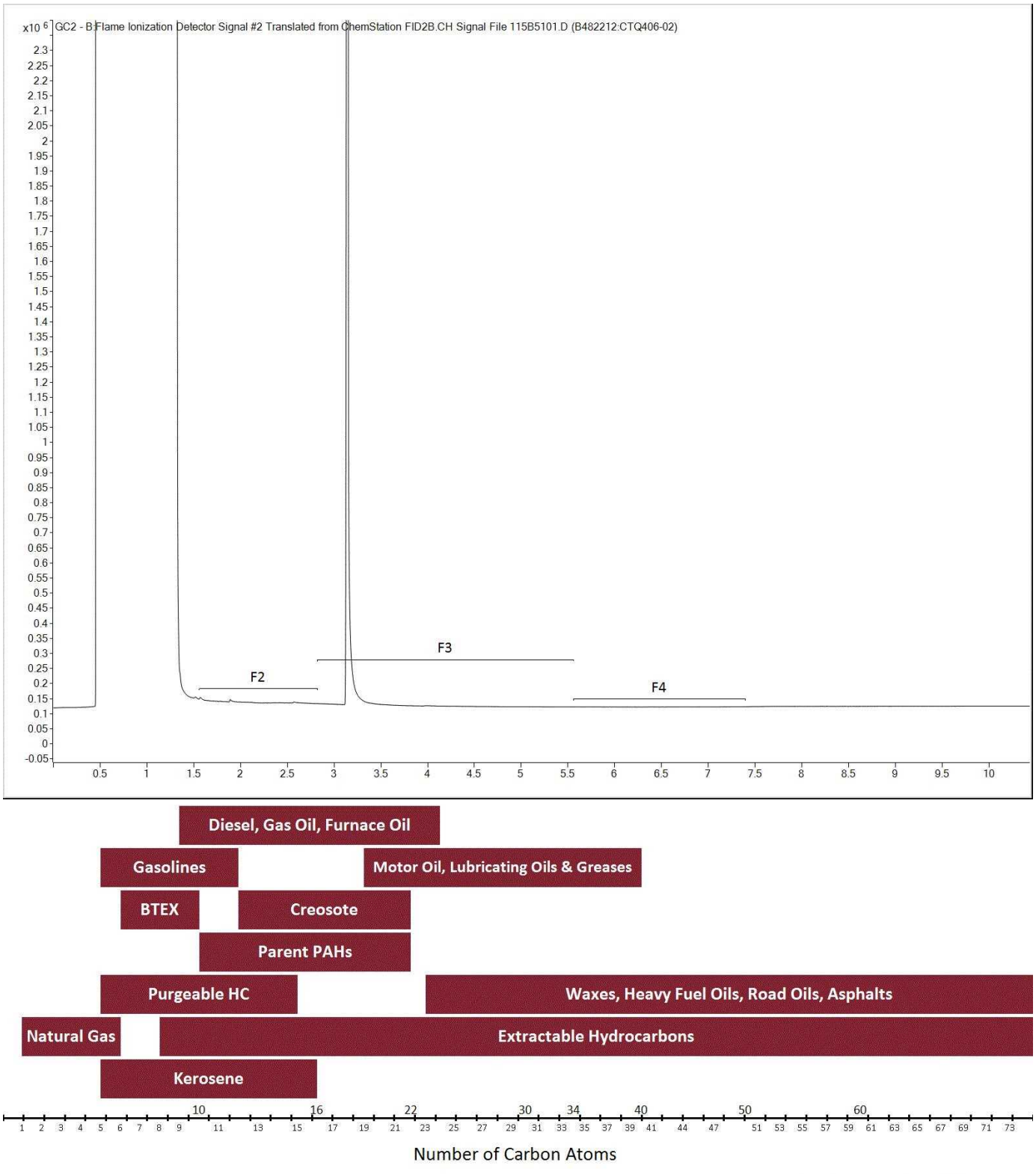
Bureau Veritas Job #: C463986
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ406

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-03

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



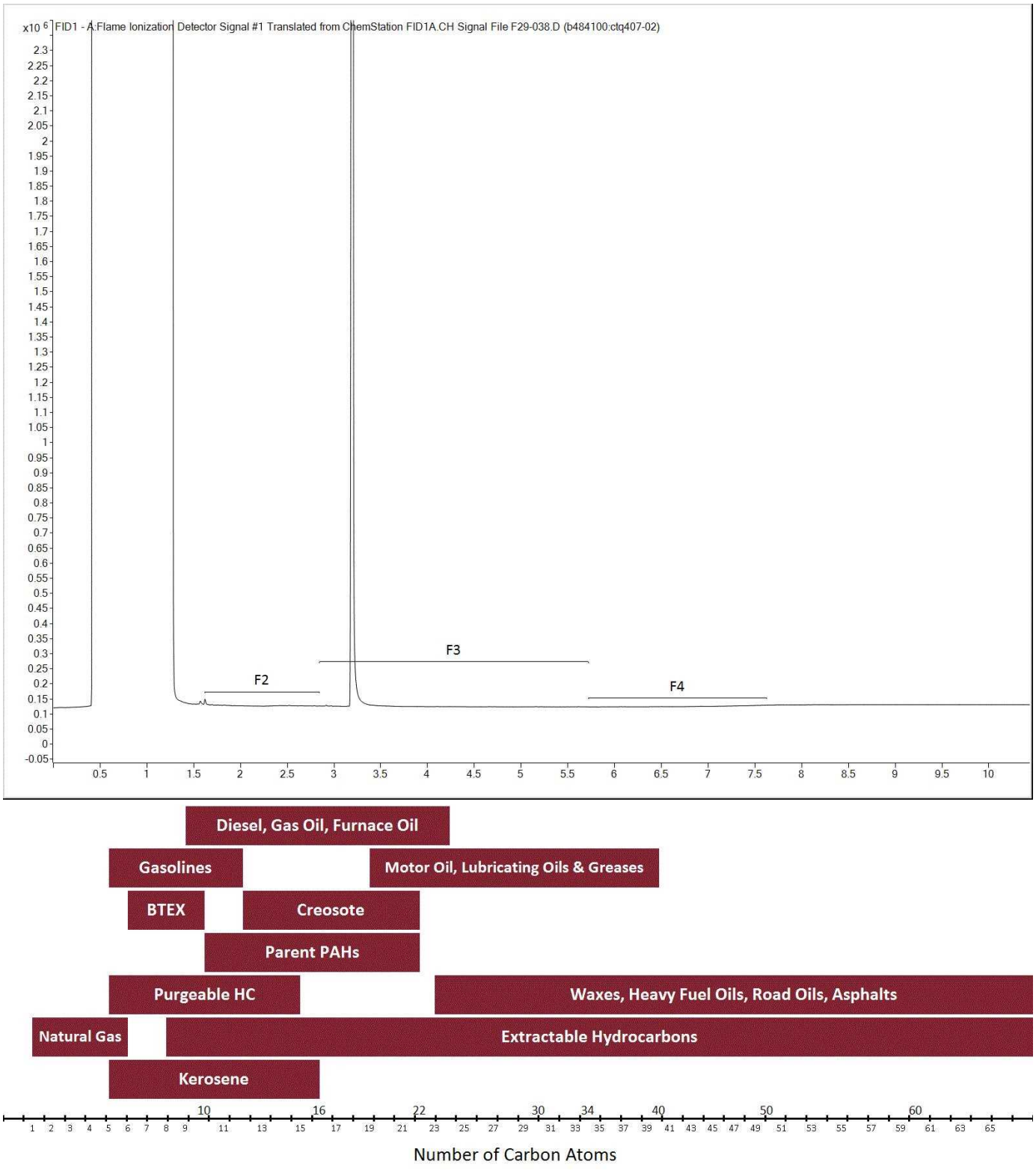
hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Bureau Veritas Job #: C463986
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ407

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DUP 3- (FIELD BLANK)

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

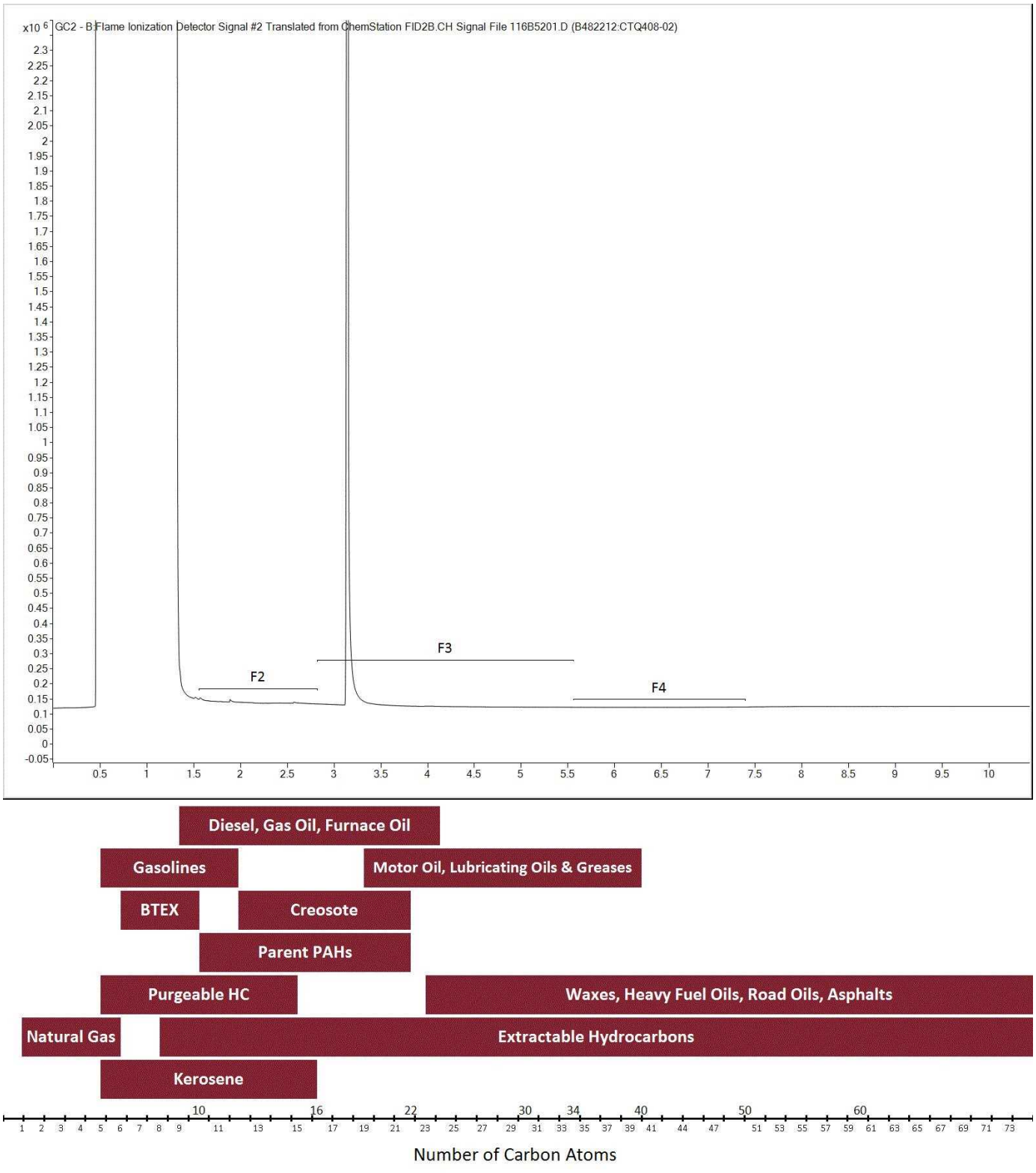


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C463986
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ408

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DUP 4-TRIP BLANK

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Maxxam
A Bureau Veritas Group Company

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Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 292216

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Same
Address: 49 Quarry Park Blvd, SE Calgary AB T2C 3E7	Address: Same
Email: alex.haigh@worleyxom	Email: Same
Ph: 587-897-6249	Ph: Same
Sampler Name (Print): Stacy Gibb/Nav Hari	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	Trace Colors, TSS, TDS, Turbidity	Cl- + Cyanide	Nitrate, Nitrite, Ammonia (Total) TKN	Orthophosphate	Sulphur - Total + Dissolved	COD	Alkylated, PAH, TPH	TOC, DOC, Sulphide
1	AEMP-US-03		X			18	2024/08/16	9:03	X			X	X							X	X					X			X	X	X	X	X	X	X	X
2	AEMP - Dup 3 - (FIELD BLANK)				X	4	2024/08/16	9:03					X																	44						
3	AEMP - Dup 4 - Trip Blank				X	8						X	X																	X						
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

MED2-2024-08-499

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS:
Email :- Canada.Chimistry@worley.com
- Local_IOR.datatrack@worley.com
- Stacy.Gibb@worley.com

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	5	3	3
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID # MCAL		
SEAL PRESENT	✓		TEMP °C	3.1	3.1	3.2
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C463986

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1.	Stacy Gibb 2024/08/18	10:10	1. BRENTON MAH	2024/08/19	12:54
2. BRENTON MAH	2024/08/19	18:00	2. N/A NAVDEEP GILL	2024/08/20	07:00
3.			3.		

SAMPLES
LABELED BY: AHG
VERIFIED BY: EPL

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292215

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547001
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463995
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

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Task Order#: 417085-54419
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Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292215

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547001
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463995
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292215

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547001
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C463995

Received: 2024/08/19, 12:54

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
26 Aug 2024 15:06:22

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTQ431	CTQ432		
Sampling Date		2024/08/15 16:53	2024/08/15 13:45		
COC Number		292215	292215		
	UNITS	**AEMP-US-02**	**AEMP-DS-08**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B482212
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B485491
Toluene	mg/L	<0.00040	<0.00040	0.00040	B485491
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B485491
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B485491
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B485491
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B484347
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B484347
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B485491
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	87	87		B482212
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	102	101		B485491
4-Bromofluorobenzene (sur.)	%	111	110		B485491
D4-1,2-Dichloroethane (sur.)	%	92	91		B485491
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTQ431	CTQ432		
Sampling Date		2024/08/15 16:53	2024/08/15 13:45		
COC Number		292215	292215		
	UNITS	**AEMP-US-02**	**AEMP-DS-08**	**RDL**	**QC Batch**
Calculated Parameters					
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	0.26	0.20	B484639
Nutrients					
Total Nitrogen (N)	mg/L	<0.20 (1)	0.32 (2)	0.20	B487800

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ431		CTQ432		
Sampling Date		2024/08/15 16:53		2024/08/15 13:45		
COC Number		292215		292215		
	UNITS	**AEMP-US-02**	**QC Batch**	**AEMP-DS-08**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	0.000029	B484349	0.000075	0.000020	B484349
Total Mercury (Hg)	ug/L	<0.0019	B485575	0.0025	0.0019	B485575
Total Aluminum (Al)	mg/L	0.49	B489847	0.96	0.0030	B490131
Total Antimony (Sb)	mg/L	<0.00060	B489847	<0.00060	0.00060	B490131
Total Arsenic (As)	mg/L	0.00051	B489847	0.00090	0.00020	B490131
Total Barium (Ba)	mg/L	0.054	B489849	0.070	0.010	B490134
Total Beryllium (Be)	mg/L	<0.0010	B489847	<0.0010	0.0010	B490131
Total Boron (B)	mg/L	<0.020	B489849	0.021	0.020	B490134
Total Calcium (Ca)	mg/L	35	B489849	37	0.30	B490134
Total Chromium (Cr)	mg/L	<0.0010	B489847	0.0012	0.0010	B490131
Total Cobalt (Co)	mg/L	0.00031	B489847	0.00079	0.00030	B490131
Total Copper (Cu)	mg/L	0.0014	B489847	0.0027	0.0010	B490131
Total Iron (Fe)	mg/L	0.53	B489849	1.7	0.060	B490134
Total Lead (Pb)	mg/L	0.00037	B489847	0.0010	0.00020	B490131
Total Lithium (Li)	mg/L	<0.020	B489849	<0.020	0.020	B490134
Total Magnesium (Mg)	mg/L	11	B489849	11	0.20	B490134
Total Manganese (Mn)	mg/L	0.016	B489849	0.040	0.0040	B490134
Total Molybdenum (Mo)	mg/L	0.0010	B489847	0.0011	0.00020	B490131
Total Nickel (Ni)	mg/L	0.0019	B489847	0.0031	0.00050	B490131
Total Phosphorus (P)	mg/L	<0.10	B489849	<0.10	0.10	B490134
Total Potassium (K)	mg/L	1.1	B489849	1.4	0.30	B490134
Total Selenium (Se)	mg/L	0.00036	B489847	0.00045	0.00020	B490131
Total Silicon (Si)	mg/L	2.5	B489849	2.8	0.50	B490134
Total Silver (Ag)	mg/L	<0.00010	B489847	<0.00010	0.00010	B490131
Total Sodium (Na)	mg/L	8.0	B489849	12	0.50	B490134
Total Strontium (Sr)	mg/L	0.23	B489849	0.24	0.020	B490134
Total Sulphur (S)	mg/L	14	B489849	16	0.20	B490134
Total Thallium (Tl)	mg/L	<0.00020	B489847	<0.00020	0.00020	B490131
Total Tin (Sn)	mg/L	<0.0010	B489847	<0.0010	0.0010	B490131
Total Titanium (Ti)	mg/L	0.0077	B489847	0.013	0.0010	B490131
Total Uranium (U)	mg/L	0.00080	B489847	0.00088	0.00010	B490131
RDL = Reportable Detection Limit						

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REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ431		CTQ432		
Sampling Date		2024/08/15 16:53		2024/08/15 13:45		
COC Number		292215		292215		
	UNITS	**AEMP-US-02**	**QC Batch**	**AEMP-DS-08**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.0014	B489847	0.0024	0.0010	B490131
Total Zinc (Zn)	mg/L	0.0035	B489847	0.032	0.0030	B490131
RDL = Reportable Detection Limit						

Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ431			CTQ431			CTQ432		
Sampling Date		2024/08/15 16:53			2024/08/15 16:53			2024/08/15 13:45		
COC Number		292215			292215			292215		
	UNITS	**AEMP-US-02**	**RDL**	**QC Batch**	**AEMP-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-08**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	130	0.50	B484352				120	0.50	B484352
Ion Balance (% Difference)	%	6.1	N/A	B484977				6.6	N/A	B484977
Nitrate (N)	mg/L	0.054	0.010	B484358				0.059	0.010	B484358
Nitrate (NO3)	mg/L	0.24	0.044	B484357				0.26	0.044	B484357
Nitrite (NO2)	mg/L	<0.033	0.033	B484357				<0.033	0.033	B484357
Sulphide (as H2S)	mg/L	0.0030	0.0020	B484351				0.0057	0.0020	B484351
Demand Parameters										
Chemical Oxygen Demand	mg/L	17	10	B487785				25	10	B487785
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B484348				<0.000020	0.000020	B484348
Misc. Inorganics										
Conductivity	uS/cm	290	2.0	B486769				300	2.0	B486769
Dissolved Organic Carbon (C)	mg/L	2.7	0.50	B486452				2.9	0.50	B486452
pH	pH	7.81	N/A	B486759				7.73	N/A	B486759
Total Organic Carbon (C)	mg/L	2.5	0.50	B486502				2.8	0.50	B486502
Total Dissolved Solids	mg/L	180	10	B485874				180	10	B485874
Total Suspended Solids	mg/L	19	1.0	B487431				31	1.0	B487431
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B486754				<1.0	1.0	B486754
Alkalinity (Total as CaCO3)	mg/L	100	1.0	B486754				100	1.0	B486754
Bicarbonate (HCO3)	mg/L	120	1.0	B486754				130	1.0	B486754
Carbonate (CO3)	mg/L	<1.0	1.0	B486754				<1.0	1.0	B486754
Hydroxide (OH)	mg/L	<1.0	1.0	B486754				<1.0	1.0	B486754
Total Sulphide	mg/L	0.0028 (1)	0.0018	B486262				0.0053	0.0018	B486262
Chloride (Cl)	mg/L	8.7	1.0	B486504				8.6	1.0	B486504
Sulphate (SO4)	mg/L	46	1.0	B486504				48	1.0	B486504
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B486870				<0.015	0.015	B486864

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Sample pH <9, preservation incomplete. Due to volatility of analyte, a low bias in the results is likely.

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Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ431			CTQ431			CTQ432		
Sampling Date		2024/08/15 16:53			2024/08/15 16:53			2024/08/15 13:45		
COC Number		292215			292215			292215		
	UNITS	**AEMP-US-02**	**RDL**	**QC Batch**	**AEMP-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-08**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486380				<0.0030	0.0030	B486380
Nitrite (N)	mg/L	<0.010	0.010	B486588	<0.010	0.010	B486588	<0.010	0.010	B486588
Nitrate plus Nitrite (N)	mg/L	0.054	0.010	B486588	0.054	0.010	B486588	0.059	0.010	B486588
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B485334				<2.0	2.0	B485334
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B485250				<2.0	2.0	B485250
Physical Properties										
True Colour	PtCo units	5.5	2.0	B486456				5.8	2.0	B486456
Physical Properties										
Turbidity	NTU	11	0.10	B485150				28	0.10	B485150

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ431	CTQ432		
Sampling Date		2024/08/15 16:53	2024/08/15 13:45		
COC Number		292215	292215		
	UNITS	**AEMP-US-02**	**AEMP-DS-08**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B484359
Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B481343
Acridine	ug/L	<0.040	<0.040	0.040	B481343
Anthracene	ug/L	<0.010	<0.010	0.010	B481343
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B481343
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B481343
Fluoranthene	ug/L	<0.010	<0.010	0.010	B481343
Fluorene	ug/L	<0.050	<0.050	0.050	B481343
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B481343
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Perylene	ug/L	<0.050	<0.050	0.050	B481343
Pyrene	ug/L	<0.020	<0.020	0.020	B481343
Quinoline	ug/L	<0.20	<0.20	0.20	B481343
Retene	ug/L	<0.050	<0.050	0.050	B481343
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ431	CTQ432		
Sampling Date		2024/08/15 16:53	2024/08/15 13:45		
COC Number		292215	292215		
	UNITS	**AEMP-US-02**	**AEMP-DS-08**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C2-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C3-fluorene	ug/L	<0.050	<0.050	0.050	B481343
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C3 fluoranthene/pyrene	ug/L	<0.020	0.020	0.020	B481343
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.025	0.0085	B481343
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.0088	0.0085	B481343
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	121	115		B481343
D8-ACENAPHTHYLENE (sur.)	%	95	89		B481343
D8-NAPHTHALENE (sur.)	%	86	80		B481343
TERPHENYL-D14 (sur.)	%	125	125		B481343
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTQ431	CTQ432		
Sampling Date		2024/08/15 16:53	2024/08/15 13:45		
COC Number		292215	292215		
	UNITS	**AEMP-US-02**	**AEMP-DS-08**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B486672
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ431		CTQ432		
Sampling Date		2024/08/15 16:53		2024/08/15 13:45		
COC Number		292215		292215		
	UNITS	**AEMP-US-02**	**QC Batch**	**AEMP-DS-08**	**RDL**	**QC Batch**
Elements						
Dissolved Aluminum (Al)	mg/L	0.051	B488054	0.036	0.0030	B488054
Dissolved Antimony (Sb)	mg/L	<0.00060	B488054	<0.00060	0.00060	B488054
Dissolved Arsenic (As)	mg/L	0.00031	B488054	0.00033	0.00020	B488054
Dissolved Barium (Ba)	mg/L	0.046	B487128	0.048	0.010	B487128
Dissolved Beryllium (Be)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Boron (B)	mg/L	<0.020	B487128	<0.020	0.020	B487128
Dissolved Calcium (Ca)	mg/L	33	B487128	33	0.30	B487128
Dissolved Chromium (Cr)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Cobalt (Co)	mg/L	<0.00030	B488054	<0.00030	0.00030	B488054
Dissolved Copper (Cu)	mg/L	0.0080	B491663	0.0037	0.0010	B488054
Dissolved Iron (Fe)	mg/L	<0.060	B487128	<0.060	0.060	B487128
Dissolved Lead (Pb)	mg/L	<0.00020	B488054	<0.00020	0.00020	B488054
Dissolved Lithium (Li)	mg/L	<0.020	B487128	<0.020	0.020	B487128
Dissolved Magnesium (Mg)	mg/L	10	B487128	10	0.20	B487128
Dissolved Manganese (Mn)	mg/L	<0.0040	B487128	<0.0040	0.0040	B487128
Dissolved Molybdenum (Mo)	mg/L	0.00099	B488054	0.0011	0.00020	B488054
Dissolved Nickel (Ni)	mg/L	0.0012	B488054	0.0011	0.00050	B488054
Dissolved Phosphorus (P)	mg/L	<0.10	B487128	<0.10	0.10	B487128
Dissolved Potassium (K)	mg/L	0.79	B487128	0.84	0.30	B487128
Dissolved Selenium (Se)	mg/L	0.00038	B488054	0.00041	0.00020	B488054
Dissolved Silicon (Si)	mg/L	1.6	B487128	1.6	0.50	B487128
Dissolved Silver (Ag)	mg/L	<0.00010	B488054	<0.00010	0.00010	B488054
Dissolved Sodium (Na)	mg/L	7.9	B487128	9.0	0.50	B487128
Dissolved Strontium (Sr)	mg/L	0.24	B487128	0.23	0.020	B487128
Dissolved Sulphur (S)	mg/L	15	B487128	15	0.20	B487128
Dissolved Thallium (Tl)	mg/L	<0.00020	B488054	<0.00020	0.00020	B488054
Dissolved Tin (Sn)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Titanium (Ti)	mg/L	0.0011	B488054	<0.0010	0.0010	B488054
Dissolved Uranium (U)	mg/L	0.00081	B488054	0.00079	0.00010	B488054
Dissolved Vanadium (V)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Zinc (Zn)	mg/L	<0.0030	B488054	0.0030	0.0030	B488054
RDL = Reportable Detection Limit						

Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CTQ431
Sample ID: AEMP-US-02
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B484352	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486672	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B485575	2024/08/20	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/24	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484977	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486870	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B484357	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B484358	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486262	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B485874	2024/08/21	2024/08/22	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487431	2024/08/22	2024/08/23	Haydee Estilong
Turbidity	TURB	B485150	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ431 Dup
Sample ID: AEMP-US-02
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh

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Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CTQ432
Sample ID: AEMP-DS-08
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B484352	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486672	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B485575	2024/08/20	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B490134	2024/08/23	2024/08/24	Kristijan Kovac
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B490131	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484977	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486864	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B484357	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B484358	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486262	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B485874	2024/08/21	2024/08/22	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487431	2024/08/22	2024/08/23	Haydee Estilong
Turbidity	TURB	B485150	N/A	2024/08/20	Amy Phan

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GENERAL COMMENTS

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

Package 1	6.0°C

Sample CTQ431 [AEMP-US-02] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CTQ432 [AEMP-DS-08] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CTQ431, Elements by ICPMS - Dissolved: Test repeated.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B481343	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/21		122	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		126	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		84	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		66	%	50 - 130
			Acenaphthene	2024/08/21	<0.10		ug/L	
			Acenaphthylene	2024/08/21	<0.10		ug/L	
			Acridine	2024/08/21	<0.040		ug/L	
			Anthracene	2024/08/21	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/21	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/21	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/21	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/21	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/21	<0.050		ug/L	
			Chrysene	2024/08/21	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/21	<0.0075		ug/L	
			Fluoranthene	2024/08/21	<0.010		ug/L	
			Fluorene	2024/08/21	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/21	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/21	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/21	<0.10		ug/L	
			Naphthalene	2024/08/21	<0.10		ug/L	
			Phenanthrene	2024/08/21	<0.050		ug/L	
			Perylene	2024/08/21	<0.050		ug/L	
			Pyrene	2024/08/21	<0.020		ug/L	
			Quinoline	2024/08/21	<0.20		ug/L	
			Retene	2024/08/21	<0.050		ug/L	
			C1-Naphthalene	2024/08/21	<0.10		ug/L	
			C3-Naphthalene	2024/08/21	<0.10		ug/L	
			C4-Naphthalene	2024/08/21	<0.10		ug/L	
			C2-Naphthalene	2024/08/21	<0.10		ug/L	
			Biphenyl	2024/08/21	<0.020		ug/L	
			C1-biphenyl	2024/08/21	<0.020		ug/L	
			C2-biphenyl	2024/08/21	<0.020		ug/L	
			C1-fluorene	2024/08/21	<0.050		ug/L	
			C2-fluorene	2024/08/21	<0.050		ug/L	
			C3-fluorene	2024/08/21	<0.050		ug/L	
			Dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/21	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/21	<0.10		ug/L	
B482212	BQU	Method Blank	O-TERPHENYL (sur.)	2024/08/21		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21	<0.10		mg/L	
B485150	AP1	Method Blank	Turbidity	2024/08/20	<0.10		NTU	
B485250	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/26	<2.0		mg/L	
B485334	RRA	Method Blank	Oil and grease	2024/08/26	<2.0		mg/L	
B485491	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/21		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		110	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		91	%	50 - 140
			Benzene	2024/08/21	<0.00040		mg/L	
			Toluene	2024/08/21	<0.00040		mg/L	
			Ethylbenzene	2024/08/21	<0.00040		mg/L	
			m & p-Xylene	2024/08/21	<0.00080		mg/L	
			o-Xylene	2024/08/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/21	<0.10		mg/L	
B485575	KHU	Method Blank	Total Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B485874	HE1	Method Blank	Total Dissolved Solids	2024/08/22	<10		mg/L	
B486262	LYV	Method Blank	Total Sulphide	2024/08/21	<0.0018		mg/L	
B486380	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486452	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486456	MOP	Method Blank	True Colour	2024/08/21	<2.0		PtCo units	
B486502	JYU	Method Blank	Total Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486504	TOR	Method Blank	Chloride (Cl)	2024/08/21	<1.0		mg/L	
			Sulphate (SO4)	2024/08/21	<1.0		mg/L	
B486588	AFI	Method Blank	Nitrite (N)	2024/08/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/21	<0.010		mg/L	
B486672	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486754	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/23	<1.0		mg/L	
			Carbonate (CO3)	2024/08/23	<1.0		mg/L	
			Hydroxide (OH)	2024/08/23	<1.0		mg/L	
B486769	AYE	Method Blank	Conductivity	2024/08/23	<2.0		uS/cm	
B486864	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B486870	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B487128	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	
B487431	HE1	Method Blank	Total Suspended Solids	2024/08/23	<1.0		mg/L	
B487785	AP1	Method Blank	Chemical Oxygen Demand	2024/08/22	<10		mg/L	
B487800	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B488054	KH2	Method Blank	Dissolved Aluminum (Al)	2024/08/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/22	<0.0010		mg/L	
B489847	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B489849	JAB	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B490131	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B490134	KKC	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B491663	JAB	Method Blank	Dissolved Copper (Cu)	2024/08/26	<0.0010		mg/L	
B486588	AFI	RPD [CTQ431-02]	Nitrite (N)	2024/08/21	NC		%	20
			Nitrate plus Nitrite (N)	2024/08/21	0.82		%	20
B486588	AFI	Matrix Spike [CTQ431-02]	Nitrite (N)	2024/08/21		104	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		114	%	80 - 120
B481343	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/21		110	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		76	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		60	%	50 - 130
			Acenaphthene	2024/08/21		75	%	50 - 130
			Acenaphthylene	2024/08/21		72	%	50 - 130
			Acridine	2024/08/21		87	%	50 - 130
			Anthracene	2024/08/21		82	%	50 - 130
			Benzo(a)anthracene	2024/08/21		89	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/21		91	%	50 - 130
			Benzo(k)fluoranthene	2024/08/21		105	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/21		86	%	50 - 130
			Benzo(c)phenanthrene	2024/08/21		91	%	50 - 130
			Benzo(a)pyrene	2024/08/21		89	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(e)pyrene	2024/08/21		83	%	50 - 130
			Chrysene	2024/08/21		98	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/21		92	%	50 - 130
			Fluoranthene	2024/08/21		93	%	50 - 130
			Fluorene	2024/08/21		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/21		82	%	50 - 130
			2-Methylnaphthalene	2024/08/21		69	%	50 - 130
			Naphthalene	2024/08/21		53	%	50 - 130
			Phenanthrene	2024/08/21		85	%	50 - 130
			Perylene	2024/08/21		85	%	50 - 130
			Pyrene	2024/08/21		93	%	50 - 130
			Quinoline	2024/08/21		98	%	50 - 130
			C1-Naphthalene	2024/08/21		44 (1)	%	50 - 130
			C3-Naphthalene	2024/08/21		72	%	50 - 130
			C2-Naphthalene	2024/08/21		54	%	50 - 130
			C1-biphenyl	2024/08/21		44 (1)	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/21		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/21		91	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/21		90	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/21		91	%	30 - 130
			1-Methylnaphthalene	2024/08/21		44 (1)	%	50 - 130
B482212	BQU	LCS	O-TERPHENYL (sur.)	2024/08/21		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		91	%	60 - 140
B485150	AP1	LCS	Turbidity	2024/08/20		102	%	80 - 120
B485250	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/26		94	%	70 - 130
B485334	RRA	LCS	Oil and grease	2024/08/26		92	%	70 - 130
B485491	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/08/21		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		89	%	50 - 140
			Benzene	2024/08/21		84	%	60 - 130
			Toluene	2024/08/21		84	%	60 - 130
			Ethylbenzene	2024/08/21		87	%	60 - 130
			m & p-Xylene	2024/08/21		86	%	60 - 130
			o-Xylene	2024/08/21		82	%	60 - 130
			F1 (C6-C10)	2024/08/21		78	%	60 - 140
B485575	KHU	LCS	Total Mercury (Hg)	2024/08/22		92	%	80 - 120
B485874	HE1	LCS	Total Dissolved Solids	2024/08/22		101	%	80 - 120
B486262	LYV	LCS	Total Sulphide	2024/08/21		111	%	80 - 120
B486380	MAP	LCS	Orthophosphate (P)	2024/08/21		100	%	80 - 120
B486452	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/21		101	%	80 - 120
B486456	MOP	LCS	True Colour	2024/08/21		94	%	80 - 120
B486502	JYU	LCS	Total Organic Carbon (C)	2024/08/21		99	%	80 - 120
B486504	TOR	LCS	Chloride (Cl)	2024/08/21		101	%	80 - 120
			Sulphate (SO4)	2024/08/21		100	%	80 - 120
B486588	AFI	LCS	Nitrite (N)	2024/08/21		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		102	%	80 - 120
B486672	KHU	LCS	Dissolved Mercury (Hg)	2024/08/22		90	%	80 - 120
B486754	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/23		102	%	80 - 120
B486759	AYE	LCS	pH	2024/08/23		100	%	97 - 103
B486769	AYE	LCS	Conductivity	2024/08/23		96	%	90 - 110
B486864	AFI	LCS	Total Ammonia (N)	2024/08/21		102	%	80 - 120
B486870	AFI	LCS	Total Ammonia (N)	2024/08/21		101	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B487128	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		103	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		100	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		102	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		99	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		97	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		100	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		99	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		102	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		103	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		98	%	80 - 120
			Dissolved Boron (B)	2024/08/21		92	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		99	%	80 - 120
B487431	HE1	LCS	Total Suspended Solids	2024/08/23		99	%	80 - 120
B487785	AP1	LCS	Chemical Oxygen Demand	2024/08/22		100	%	80 - 120
B487800	YL7	LCS	Total Nitrogen (N)	2024/08/22		107	%	80 - 120
B488054	KH2	LCS	Dissolved Aluminum (Al)	2024/08/23		109	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/23		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/23		103	%	80 - 120
			Dissolved Copper (Cu)	2024/08/23		105	%	80 - 120
			Dissolved Lead (Pb)	2024/08/23		101	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/23		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/23		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/23		102	%	80 - 120
			Dissolved Selenium (Se)	2024/08/23		110	%	80 - 120
			Dissolved Silver (Ag)	2024/08/23		102	%	80 - 120
			Dissolved Arsenic (As)	2024/08/23		108	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/23		99	%	80 - 120
			Dissolved Tin (Sn)	2024/08/23		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/23		101	%	80 - 120
			Dissolved Uranium (U)	2024/08/23		103	%	80 - 120
			Dissolved Vanadium (V)	2024/08/23		105	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/23		109	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/23		99	%	80 - 120
B489847	JAB	LCS	Total Aluminum (Al)	2024/08/24		117	%	80 - 120
			Total Chromium (Cr)	2024/08/24		96	%	80 - 120
			Total Cobalt (Co)	2024/08/24		98	%	80 - 120
			Total Copper (Cu)	2024/08/24		95	%	80 - 120
			Total Lead (Pb)	2024/08/24		102	%	80 - 120
			Total Antimony (Sb)	2024/08/24		99	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		101	%	80 - 120
			Total Nickel (Ni)	2024/08/24		96	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		99	%	80 - 120
			Total Arsenic (As)	2024/08/24		91	%	80 - 120
			Total Thallium (Tl)	2024/08/24		105	%	80 - 120
			Total Tin (Sn)	2024/08/24		105	%	80 - 120
			Total Titanium (Ti)	2024/08/24		95	%	80 - 120
			Total Uranium (U)	2024/08/24		103	%	80 - 120
			Total Vanadium (V)	2024/08/24		98	%	80 - 120
			Total Zinc (Zn)	2024/08/24		87	%	80 - 120
			Total Beryllium (Be)	2024/08/24		101	%	80 - 120

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B489849	JAB	LCS	Total Iron (Fe)	2024/08/23		101	%	80 - 120
			Total Lithium (Li)	2024/08/23		95	%	80 - 120
			Total Magnesium (Mg)	2024/08/23		104	%	80 - 120
			Total Manganese (Mn)	2024/08/23		101	%	80 - 120
			Total Potassium (K)	2024/08/23		96	%	80 - 120
			Total Sodium (Na)	2024/08/23		95	%	80 - 120
			Total Strontium (Sr)	2024/08/23		97	%	80 - 120
			Total Sulphur (S)	2024/08/23		100	%	80 - 120
			Total Phosphorus (P)	2024/08/23		100	%	80 - 120
			Total Barium (Ba)	2024/08/23		100	%	80 - 120
			Total Silicon (Si)	2024/08/23		99	%	80 - 120
			Total Boron (B)	2024/08/23		93	%	80 - 120
			Total Calcium (Ca)	2024/08/23		97	%	80 - 120
B490131	JAB	LCS	Total Aluminum (Al)	2024/08/24		106	%	80 - 120
			Total Chromium (Cr)	2024/08/24		90	%	80 - 120
			Total Cobalt (Co)	2024/08/24		91	%	80 - 120
			Total Copper (Cu)	2024/08/24		88	%	80 - 120
			Total Lead (Pb)	2024/08/24		98	%	80 - 120
			Total Antimony (Sb)	2024/08/24		101	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		98	%	80 - 120
			Total Nickel (Ni)	2024/08/24		89	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		94	%	80 - 120
			Total Arsenic (As)	2024/08/24		90	%	80 - 120
			Total Thallium (Tl)	2024/08/24		97	%	80 - 120
			Total Tin (Sn)	2024/08/24		102	%	80 - 120
			Total Titanium (Ti)	2024/08/24		89	%	80 - 120
			Total Uranium (U)	2024/08/24		99	%	80 - 120
			Total Vanadium (V)	2024/08/24		92	%	80 - 120
			Total Zinc (Zn)	2024/08/24		86	%	80 - 120
			Total Beryllium (Be)	2024/08/24		95	%	80 - 120
B490134	KKC	LCS	Total Iron (Fe)	2024/08/24		105	%	80 - 120
			Total Lithium (Li)	2024/08/24		92	%	80 - 120
			Total Magnesium (Mg)	2024/08/24		99	%	80 - 120
			Total Manganese (Mn)	2024/08/24		99	%	80 - 120
			Total Potassium (K)	2024/08/24		91	%	80 - 120
			Total Sodium (Na)	2024/08/24		91	%	80 - 120
			Total Strontium (Sr)	2024/08/24		98	%	80 - 120
			Total Sulphur (S)	2024/08/24		99	%	80 - 120
			Total Phosphorus (P)	2024/08/24		99	%	80 - 120
			Total Barium (Ba)	2024/08/24		99	%	80 - 120
			Total Silicon (Si)	2024/08/24		98	%	80 - 120
			Total Boron (B)	2024/08/24		89	%	80 - 120
			Total Calcium (Ca)	2024/08/24		93	%	80 - 120
B491663	JAB	LCS	Dissolved Copper (Cu)	2024/08/26		98	%	80 - 120

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B487800	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C463995
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

VALIDATION SIGNATURE PAGE

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

Elizabeth Chacko, Senior Analyst, Organics

Gita Pokhrel, Laboratory Supervisor

Qiliang (Alex) Wu, Senior Analyst

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

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

VALIDATION SIGNATURE PAGE(CONT'D)

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

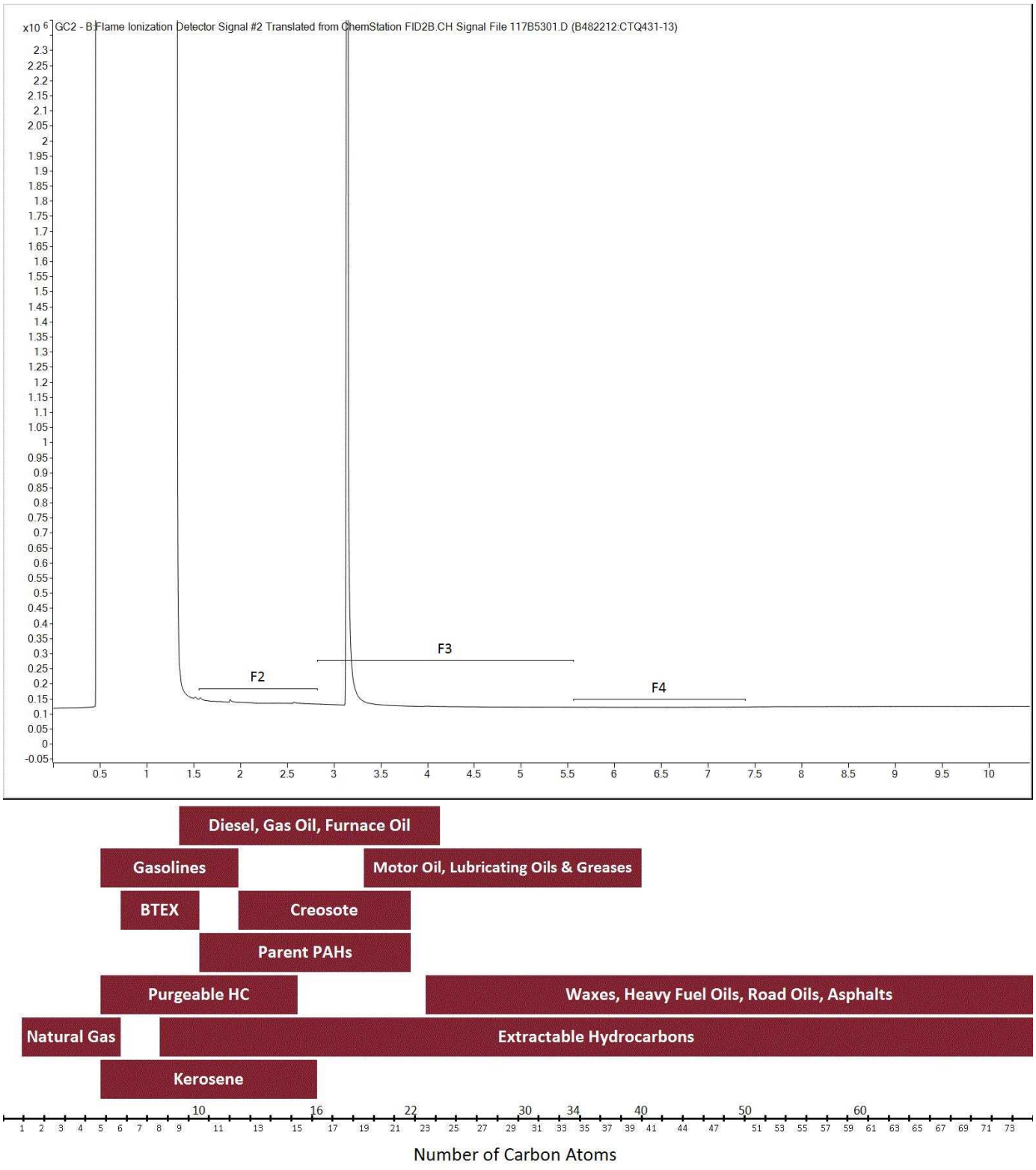
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C463995
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ431

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-US-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

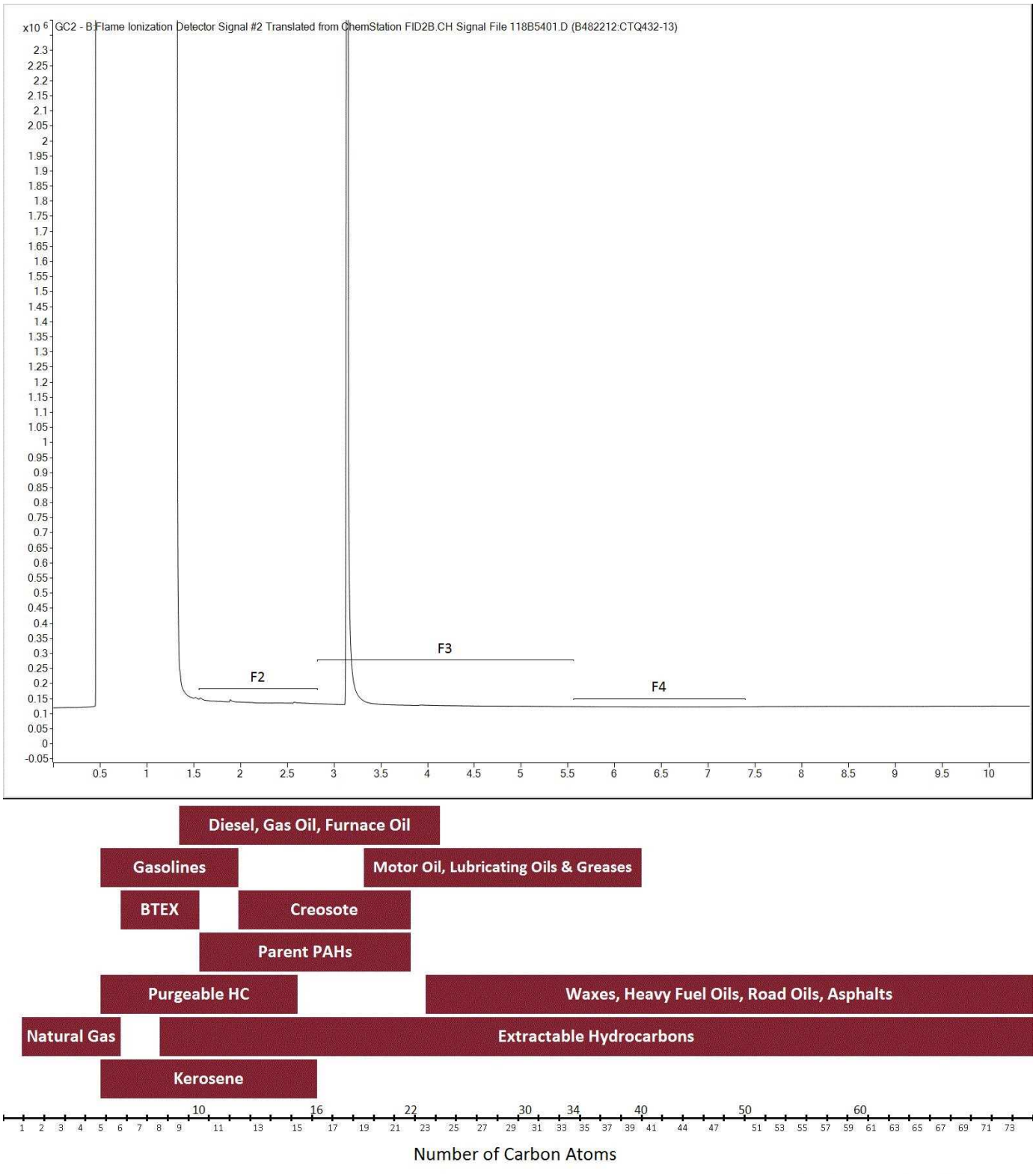


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C463995
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ432

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-08

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

C463995
2024/08/19 12:54

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292215

INVOICE INFORMATION

Company Name: ☒ Imperial Oil ☐ ExxonMobil
Contact Name: Alex Haigh
Address: 99 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com
Ph: 587 897 6249
Sampler Name (Print): Stacy Gibb | Nav Hari

REPORT INFORMATION

Company Name: Worley
Contact Name: Alex Haigh
Address: Same
Email: Same
Ph: Same
Consultant Project #: 417085-54419-24200

ANALYSIS REQUESTED

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	Oil and grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (total)	Orthophosphate	Sulphur - Total & dissolved	COD	Alkylated PAH, TPH
1	AEMP-US-02		X			18	2024/08/15	16:53	X			X	X							X	X					X			X	X	X	X	X	X	X	X
2	AEMP-DS-08		X			18	2024/08/15	17:45	X			X	X							X	X					X			X	X	X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

med2-2024-08-504

IOL SITE LOCATION: Norman Wells, NT
IOL PROJECT # (if applicable): NA
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com cacal_lor_datatrack@worley.com stacy.gibb@worley.com JES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: NA

TURNAROUND TIME
Standard (5 days) ☑
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	7	5	6
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB #

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/08/18	10:10	1.	BRENTON MAH	2024/08/19	12:54
2.				2.			
3.				3.			

SAMPLES
LABELED BY:
VERIFIED BY:

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292215

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: Same
Email: alex.haigh@worley.com	Email: Same
Ph: 587 897 6249	Ph: Same
Sampler Name (Print): Stacy Gibb / Nav Hari	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☐ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	Oil and grease	TOC, DOC, Sulphide	Nitrate, Nitrite & Ammonia (Total)	Orthophosphate	Sulphur - Total & dissolved	COD	Alkylated PAH, TPH
1	AEMP-US-02		X			18	2024/08/15	16:53	X			X	X							X	X					X			X	X	X	X	X	X	X
2	AEMP-DS-08		X			18	2024/08/15	17:45	X			X	X							X	X					X			X	X	X	X	X	X	X
3																																					
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					

med2-2024-08-504

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): NA

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com cacal_lor_datatrack@worley.com stacy.gibb@worley.com JES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: NA

TURNAROUND TIME
Standard (5 days) ☑
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓		7 5 6			

	YES	NO	COOLER ID # MCAL	TEMP °C 1	2	3
SEAL PRESENT	✓					
SEAL INTACT	✓			7.4	7.1	7.2
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C463995

SAMPLES
LABELED BY: SAS
VERIFIED BY: SEZ

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/08/19	10:10	1.	BRENTON MAH	2024/08/19	12:54
2.	BRENTON MAH	2024/08/19	18:06	2.	NAVDEEP GILL	2024/08/20	07:00
3.				3.			

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292214

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547004
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464046
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292214

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547004
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464046
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292214

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/26
Report #: R3547004
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464046

Received: 2024/08/19, 12:54

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
26 Aug 2024 15:05:38

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTQ750	CTQ751		
Sampling Date		2024/08/15 11:20	2024/08/16 16:03		
COC Number		292214	292214		
	UNITS	**AEMP-DS-03**	**AEMP-US-04**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B482212
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B485491
Toluene	mg/L	<0.00040	<0.00040	0.00040	B485491
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B485491
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B485491
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B485491
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B484347
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B484347
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B485491
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	88	87		B482212
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	101	100		B485491
4-Bromofluorobenzene (sur.)	%	111	107		B485491
D4-1,2-Dichloroethane (sur.)	%	92	92		B485491
RDL = Reportable Detection Limit					

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TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTQ750		CTQ751		
Sampling Date		2024/08/15 11:20		2024/08/16 16:03		
COC Number		292214		292214		
	UNITS	**AEMP-DS-03**	**RDL**	**AEMP-US-04**	**RDL**	**QC Batch**
Calculated Parameters						
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.23	0.20	0.20	0.020	B484639
Nutrients						
Total Nitrogen (N)	mg/L	0.29 (1)	0.20	0.24	0.020	B487800

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ750	CTQ751			CTQ751		
Sampling Date		2024/08/15 11:20	2024/08/16 16:03			2024/08/16 16:03		
COC Number		292214	292214			292214		
	UNITS	**AEMP-DS-03**	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**
Elements								
Total Cadmium (Cd)	mg/L	0.000085	<0.000020	0.000020	B484349			
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B487142	<0.0019	0.0019	B487142
Total Aluminum (Al)	mg/L	1.7	0.055	0.0030	B489847			
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B489847			
Total Arsenic (As)	mg/L	0.0011	<0.00020	0.00020	B489847			
Total Barium (Ba)	mg/L	0.089	0.089	0.010	B489849			
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B489847			
Total Boron (B)	mg/L	0.021	0.055	0.020	B489849			
Total Calcium (Ca)	mg/L	45	87	0.30	B489849			
Total Chromium (Cr)	mg/L	0.0023	<0.0010	0.0010	B489847			
Total Cobalt (Co)	mg/L	0.0012	<0.00030	0.00030	B489847			
Total Copper (Cu)	mg/L	0.0031	<0.0010	0.0010	B489847			
Total Iron (Fe)	mg/L	2.1	0.095	0.060	B489849			
Total Lead (Pb)	mg/L	0.0013	<0.00020	0.00020	B489847			
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B489849			
Total Magnesium (Mg)	mg/L	13	35	0.20	B489849			
Total Manganese (Mn)	mg/L	0.046	0.0094	0.0040	B489849			
Total Molybdenum (Mo)	mg/L	0.0013	0.0021	0.00020	B489847			
Total Nickel (Ni)	mg/L	0.0046	0.00060	0.00050	B489847			
Total Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B489849			
Total Potassium (K)	mg/L	1.7	1.3	0.30	B489849			
Total Selenium (Se)	mg/L	0.00054	<0.00020	0.00020	B489847			
Total Silicon (Si)	mg/L	6.0	2.5	0.50	B489849			
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B489847			
Total Sodium (Na)	mg/L	8.5	33	0.50	B489849			
Total Strontium (Sr)	mg/L	0.27	1.7	0.020	B489849			
Total Sulphur (S)	mg/L	18	63	0.20	B489849			
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B489847			
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B489847			
Total Titanium (Ti)	mg/L	0.035	<0.0010	0.0010	B489847			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ750	CTQ751			CTQ751		
Sampling Date		2024/08/15 11:20	2024/08/16 16:03			2024/08/16 16:03		
COC Number		292214	292214			292214		
	UNITS	**AEMP-DS-03**	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**
Total Uranium (U)	mg/L	0.0011	0.0013	0.00010	B489847			
Total Vanadium (V)	mg/L	0.0042	<0.0010	0.0010	B489847			
Total Zinc (Zn)	mg/L	0.012	<0.0030	0.0030	B489847			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ750			CTQ750			CTQ751		
Sampling Date		2024/08/15 11:20			2024/08/15 11:20			2024/08/16 16:03		
COC Number		292214			292214			292214		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-04**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	150	0.50	B484352				350	0.50	B484352
Ion Balance (% Difference)	%	2.9	N/A	B484977				1.2	N/A	B484977
Nitrate (N)	mg/L	0.056	0.010	B484358				0.042	0.010	B484358
Nitrate (NO3)	mg/L	0.25	0.044	B484357				0.19	0.044	B484357
Nitrite (NO2)	mg/L	<0.033	0.033	B484357				<0.033	0.033	B484357
Sulphide (as H2S)	mg/L	0.011	0.0020	B484351				<0.0020	0.0020	B484351
Demand Parameters										
Chemical Oxygen Demand	mg/L	24	10	B487785	26	10	B487785	<10 (1)	10	B487785
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B484348				<0.000020	0.000020	B484348
Misc. Inorganics										
Conductivity	uS/cm	330	2.0	B486769				790	2.0	B486769
Dissolved Organic Carbon (C)	mg/L	2.9	0.50	B486452				1.8	0.50	B486452
pH	pH	7.85	N/A	B486759				8.35	N/A	B486759
Total Organic Carbon (C)	mg/L	3.2	0.50	B486502				2.0	0.50	B486502
Total Dissolved Solids	mg/L	210	10	B485896				510	10	B487415
Total Suspended Solids	mg/L	50	1.0	B487431				3.5	1.0	B487438
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B486754				3.3	1.0	B486754
Alkalinity (Total as CaCO3)	mg/L	100	1.0	B486754				190	1.0	B486754
Bicarbonate (HCO3)	mg/L	130	1.0	B486754				220	1.0	B486754
Carbonate (CO3)	mg/L	<1.0	1.0	B486754				3.9	1.0	B486754
Hydroxide (OH)	mg/L	<1.0	1.0	B486754				<1.0	1.0	B486754
Total Sulphide	mg/L	0.0099	0.0018	B486259	0.0089	0.0018	B486259	<0.0018	0.0018	B486259
Chloride (Cl)	mg/L	8.5	1.0	B486504				38	1.0	B486504
Sulphate (SO4)	mg/L	55	1.0	B486504				180	5.0	B486504
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B486870				<0.015	0.015	B486870

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ750			CTQ750			CTQ751		
Sampling Date		2024/08/15 11:20			2024/08/15 11:20			2024/08/16 16:03		
COC Number		292214			292214			292214		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-04**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486380				<0.0030	0.0030	B486380
Nitrite (N)	mg/L	<0.010	0.010	B486588				<0.010	0.010	B486588
Nitrate plus Nitrite (N)	mg/L	0.056	0.010	B486588				0.042	0.010	B486588
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B485334				<2.0	2.0	B485334
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B485250				<2.0	2.0	B485250
Physical Properties										
True Colour	PtCo units	6.7	2.0	B486456				4.2	2.0	B486456
Physical Properties										
Turbidity	NTU	50	0.10	B485511				0.85	0.10	B485511

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ750	CTQ751		
Sampling Date		2024/08/15 11:20	2024/08/16 16:03		
COC Number		292214	292214		
	UNITS	**AEMP-DS-03**	**AEMP-US-04**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B484359
Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B481343
Acridine	ug/L	<0.040	<0.040	0.040	B481343
Anthracene	ug/L	<0.010	<0.010	0.010	B481343
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B481343
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B481343
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B481343
Fluoranthene	ug/L	<0.010	<0.010	0.010	B481343
Fluorene	ug/L	<0.050	<0.050	0.050	B481343
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B481343
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B481343
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Phenanthrene	ug/L	<0.050	<0.050	0.050	B481343
Perylene	ug/L	<0.050	<0.050	0.050	B481343
Pyrene	ug/L	<0.020	<0.020	0.020	B481343
Quinoline	ug/L	<0.20	<0.20	0.20	B481343
Retene	ug/L	<0.050	<0.050	0.050	B481343
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B481343
Biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ750	CTQ751		
Sampling Date		2024/08/15 11:20	2024/08/16 16:03		
COC Number		292214	292214		
	UNITS	**AEMP-DS-03**	**AEMP-US-04**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B481343
C1-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C2-fluorene	ug/L	<0.050	<0.050	0.050	B481343
C3-fluorene	ug/L	<0.050	<0.050	0.050	B481343
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B481343
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B481343
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B481343
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B481343
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B481343
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B481343
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B481343
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	120	117		B481343
D8-ACENAPHTHYLENE (sur.)	%	97	92		B481343
D8-NAPHTHALENE (sur.)	%	90	84		B481343
TERPHENYL-D14 (sur.)	%	124	121		B481343
RDL = Reportable Detection Limit					

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTQ750	CTQ751	CTQ751		
Sampling Date		2024/08/15 11:20	2024/08/16 16:03	2024/08/16 16:03		
COC Number		292214	292214	292214		
	UNITS	**AEMP-DS-03**	**AEMP-US-04**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**
Elements						
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	B486666

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ750	CTQ751		
Sampling Date		2024/08/15 11:20	2024/08/16 16:03		
COC Number		292214	292214		
	UNITS	**AEMP-DS-03**	**AEMP-US-04**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.047	0.0032	0.0030	B488054
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B488054
Dissolved Arsenic (As)	mg/L	0.00039	<0.00020	0.00020	B488054
Dissolved Barium (Ba)	mg/L	0.053	0.086	0.010	B487128
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B488054
Dissolved Boron (B)	mg/L	<0.020	0.034	0.020	B487128
Dissolved Calcium (Ca)	mg/L	40	86	0.30	B487128
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B488054
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B488054
Dissolved Copper (Cu)	mg/L	0.0013	<0.0010	0.0010	B488054
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B487128
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B488054
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	B487128
Dissolved Magnesium (Mg)	mg/L	12	32	0.20	B487128
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0058	0.0040	B487128
Dissolved Molybdenum (Mo)	mg/L	0.0012	0.0017	0.00020	B488054
Dissolved Nickel (Ni)	mg/L	0.0013	0.00051	0.00050	B488054
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B487128
Dissolved Potassium (K)	mg/L	0.83	1.2	0.30	B487128
Dissolved Selenium (Se)	mg/L	0.00050	<0.00020	0.00020	B488054
Dissolved Silicon (Si)	mg/L	1.7	2.2	0.50	B487128
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B488054
Dissolved Sodium (Na)	mg/L	8.0	33	0.50	B487128
Dissolved Strontium (Sr)	mg/L	0.26	1.7	0.020	B487128
Dissolved Sulphur (S)	mg/L	19	62	0.20	B487128
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B488054
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B488054
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B488054
Dissolved Uranium (U)	mg/L	0.00095	0.0011	0.00010	B488054
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B488054
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B488054
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ750
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B484352	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/23	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484977	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486870	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B484357	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B484358	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B485896	2024/08/21	2024/08/23	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487431	2024/08/22	2024/08/23	Haydee Estilong
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ750 Dup
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan

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Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ750 Dup
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu

Bureau Veritas ID: CTQ751
Sample ID: AEMP-US-04
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B484347	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B484352	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/24	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484977	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486870	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B484357	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B484358	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B487415	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487438	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ751 Dup
Sample ID: AEMP-US-04
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung

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GENERAL COMMENTS

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

Package 1	4.3°C

Sample CTQ750 [AEMP-DS-03] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CTQ751 [AEMP-US-04] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B481343	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/21		122	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		126	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		84	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		66	%	50 - 130
			Acenaphthene	2024/08/21	<0.10		ug/L	
			Acenaphthylene	2024/08/21	<0.10		ug/L	
			Acridine	2024/08/21	<0.040		ug/L	
			Anthracene	2024/08/21	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/21	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/21	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/21	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/21	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/21	<0.050		ug/L	
			Chrysene	2024/08/21	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/21	<0.0075		ug/L	
			Fluoranthene	2024/08/21	<0.010		ug/L	
			Fluorene	2024/08/21	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/21	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/21	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/21	<0.10		ug/L	
			Naphthalene	2024/08/21	<0.10		ug/L	
			Phenanthrene	2024/08/21	<0.050		ug/L	
			Perylene	2024/08/21	<0.050		ug/L	
			Pyrene	2024/08/21	<0.020		ug/L	
			Quinoline	2024/08/21	<0.20		ug/L	
			Retene	2024/08/21	<0.050		ug/L	
			C1-Naphthalene	2024/08/21	<0.10		ug/L	
			C3-Naphthalene	2024/08/21	<0.10		ug/L	
			C4-Naphthalene	2024/08/21	<0.10		ug/L	
			C2-Naphthalene	2024/08/21	<0.10		ug/L	
			Biphenyl	2024/08/21	<0.020		ug/L	
			C1-biphenyl	2024/08/21	<0.020		ug/L	
			C2-biphenyl	2024/08/21	<0.020		ug/L	
			C1-fluorene	2024/08/21	<0.050		ug/L	
			C2-fluorene	2024/08/21	<0.050		ug/L	
			C3-fluorene	2024/08/21	<0.050		ug/L	
			Dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/21	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/21	<0.10		ug/L	
B482212	BQU	Method Blank	O-TERPHENYL (sur.)	2024/08/21		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21	<0.10		mg/L	
B485250	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/26	<2.0		mg/L	
B485334	RRA	Method Blank	Oil and grease	2024/08/26	<2.0		mg/L	
B485491	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/21		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		110	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		91	%	50 - 140
			Benzene	2024/08/21	<0.00040		mg/L	
			Toluene	2024/08/21	<0.00040		mg/L	
			Ethylbenzene	2024/08/21	<0.00040		mg/L	
			m & p-Xylene	2024/08/21	<0.00080		mg/L	
			o-Xylene	2024/08/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/21	<0.10		mg/L	
B485511	AP1	Method Blank	Turbidity	2024/08/20	<0.10		NTU	
B485896	HE1	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B486259	LYV	Method Blank	Total Sulphide	2024/08/21	<0.0018		mg/L	
B486380	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486452	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486456	MOP	Method Blank	True Colour	2024/08/21	<2.0		PtCo units	
B486502	JYU	Method Blank	Total Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486504	TOR	Method Blank	Chloride (Cl)	2024/08/21	<1.0		mg/L	
			Sulphate (SO4)	2024/08/21	<1.0		mg/L	
B486588	AFI	Method Blank	Nitrite (N)	2024/08/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/21	<0.010		mg/L	
B486666	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486754	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/23	<1.0		mg/L	
			Carbonate (CO3)	2024/08/23	<1.0		mg/L	
			Hydroxide (OH)	2024/08/23	<1.0		mg/L	
B486769	AYE	Method Blank	Conductivity	2024/08/23	<2.0		uS/cm	
B486870	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B487128	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B487142	KHU	Method Blank	Total Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B487415	TNY	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B487431	HE1	Method Blank	Total Suspended Solids	2024/08/23	<1.0		mg/L	
B487438	TNY	Method Blank	Total Suspended Solids	2024/08/23	<0.99		mg/L	
B487785	AP1	Method Blank	Chemical Oxygen Demand	2024/08/22	<10		mg/L	
B487800	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B488054	KH2	Method Blank	Dissolved Aluminum (Al)	2024/08/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/22	<0.0010		mg/L	
B489847	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B489849	JAB	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B486259	LYV	RPD [CTQ750-07]	Total Sulphide	2024/08/21	11		%	20
B487785	AP1	RPD [CTQ750-05]	Chemical Oxygen Demand	2024/08/22	8.3		%	20
B486666	KHU	RPD [CTQ751-09]	Dissolved Mercury (Hg)	2024/08/22	NC		%	20
B487142	KHU	RPD [CTQ751-08]	Total Mercury (Hg)	2024/08/22	NC		%	20
B486259	LYV	Matrix Spike [CTQ751-07]	Total Sulphide	2024/08/21		107	%	80 - 120
B486666	KHU	Matrix Spike [CTQ750-09]	Dissolved Mercury (Hg)	2024/08/22		90	%	80 - 120
B487785	AP1	Matrix Spike [CTQ750-05]	Chemical Oxygen Demand	2024/08/22		104	%	80 - 120
B489847	JAB	Matrix Spike [CTQ751-03]	Total Aluminum (Al)	2024/08/24		120	%	80 - 120
			Total Chromium (Cr)	2024/08/24		96	%	80 - 120
			Total Cobalt (Co)	2024/08/24		97	%	80 - 120
			Total Copper (Cu)	2024/08/24		92	%	80 - 120
			Total Lead (Pb)	2024/08/24		100	%	80 - 120
			Total Antimony (Sb)	2024/08/24		100	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		105	%	80 - 120
			Total Nickel (Ni)	2024/08/24		94	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		98	%	80 - 120
			Total Arsenic (As)	2024/08/24		92	%	80 - 120
			Total Thallium (Tl)	2024/08/24		104	%	80 - 120
			Total Tin (Sn)	2024/08/24		106	%	80 - 120
			Total Titanium (Ti)	2024/08/24		97	%	80 - 120
			Total Uranium (U)	2024/08/24		103	%	80 - 120
			Total Vanadium (V)	2024/08/24		100	%	80 - 120
			Total Zinc (Zn)	2024/08/24		86	%	80 - 120
			Total Beryllium (Be)	2024/08/24		99	%	80 - 120
B481343	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/21		110	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		76	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		60	%	50 - 130
			Acenaphthene	2024/08/21		75	%	50 - 130
			Acenaphthylene	2024/08/21		72	%	50 - 130
			Acridine	2024/08/21		87	%	50 - 130
			Anthracene	2024/08/21		82	%	50 - 130
			Benzo(a)anthracene	2024/08/21		89	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/21		91	%	50 - 130
			Benzo(k)fluoranthene	2024/08/21		105	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/21		86	%	50 - 130
			Benzo(c)phenanthrene	2024/08/21		91	%	50 - 130
			Benzo(a)pyrene	2024/08/21		89	%	50 - 130
			Benzo(e)pyrene	2024/08/21		83	%	50 - 130
			Chrysene	2024/08/21		98	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/21		92	%	50 - 130
			Fluoranthene	2024/08/21		93	%	50 - 130
			Fluorene	2024/08/21		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/21		82	%	50 - 130
			2-Methylnaphthalene	2024/08/21		69	%	50 - 130
			Naphthalene	2024/08/21		53	%	50 - 130
			Phenanthrene	2024/08/21		85	%	50 - 130
			Perylene	2024/08/21		85	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Pyrene	2024/08/21		93	%	50 - 130
			Quinoline	2024/08/21		98	%	50 - 130
			C1-Naphthalene	2024/08/21		44 (1)	%	50 - 130
			C3-Naphthalene	2024/08/21		72	%	50 - 130
			C2-Naphthalene	2024/08/21		54	%	50 - 130
			C1-biphenyl	2024/08/21		44 (1)	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/21		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/21		91	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/21		90	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/21		91	%	30 - 130
			1-Methylnaphthalene	2024/08/21		44 (1)	%	50 - 130
B482212	BQU	LCS	O-TERPHENYL (sur.)	2024/08/21		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		91	%	60 - 140
B485250	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/26		94	%	70 - 130
B485334	RRA	LCS	Oil and grease	2024/08/26		92	%	70 - 130
B485491	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/08/21		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		89	%	50 - 140
			Benzene	2024/08/21		84	%	60 - 130
			Toluene	2024/08/21		84	%	60 - 130
			Ethylbenzene	2024/08/21		87	%	60 - 130
			m & p-Xylene	2024/08/21		86	%	60 - 130
			o-Xylene	2024/08/21		82	%	60 - 130
			F1 (C6-C10)	2024/08/21		78	%	60 - 140
B485511	AP1	LCS	Turbidity	2024/08/20		100	%	80 - 120
B485896	HE1	LCS	Total Dissolved Solids	2024/08/23		96	%	80 - 120
B486259	LYV	LCS	Total Sulphide	2024/08/21		105	%	80 - 120
B486380	MAP	LCS	Orthophosphate (P)	2024/08/21		100	%	80 - 120
B486452	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/21		101	%	80 - 120
B486456	MOP	LCS	True Colour	2024/08/21		94	%	80 - 120
B486502	JYU	LCS	Total Organic Carbon (C)	2024/08/21		99	%	80 - 120
B486504	TOR	LCS	Chloride (Cl)	2024/08/21		101	%	80 - 120
			Sulphate (SO4)	2024/08/21		100	%	80 - 120
B486588	AFI	LCS	Nitrite (N)	2024/08/21		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		102	%	80 - 120
B486666	KHU	LCS	Dissolved Mercury (Hg)	2024/08/22		96	%	80 - 120
B486754	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/23		102	%	80 - 120
B486759	AYE	LCS	pH	2024/08/23		100	%	97 - 103
B486769	AYE	LCS	Conductivity	2024/08/23		96	%	90 - 110
B486870	AFI	LCS	Total Ammonia (N)	2024/08/21		101	%	80 - 120
B487128	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		103	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		100	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		102	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		99	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		97	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		100	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		99	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		102	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		103	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		98	%	80 - 120
			Dissolved Boron (B)	2024/08/21		92	%	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 Calcium (Ca)	2024/08/21		99	%	80 - 120
B487142	KHU	LCS	Total Mercury (Hg)	2024/08/22		92	%	80 - 120
B487415	TNY	LCS	Total Dissolved Solids	2024/08/23		99	%	80 - 120
B487431	HE1	LCS	Total Suspended Solids	2024/08/23		99	%	80 - 120
B487438	TNY	LCS	Total Suspended Solids	2024/08/23		92	%	80 - 120
B487785	AP1	LCS	Chemical Oxygen Demand	2024/08/22		100	%	80 - 120
B487800	YL7	LCS	Total Nitrogen (N)	2024/08/22		107	%	80 - 120
B488054	KH2	LCS	Dissolved Aluminum (Al)	2024/08/23		109	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/23		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/23		103	%	80 - 120
			Dissolved Copper (Cu)	2024/08/23		105	%	80 - 120
			Dissolved Lead (Pb)	2024/08/23		101	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/23		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/23		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/23		102	%	80 - 120
			Dissolved Selenium (Se)	2024/08/23		110	%	80 - 120
			Dissolved Silver (Ag)	2024/08/23		102	%	80 - 120
			Dissolved Arsenic (As)	2024/08/23		108	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/23		99	%	80 - 120
			Dissolved Tin (Sn)	2024/08/23		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/23		101	%	80 - 120
			Dissolved Uranium (U)	2024/08/23		103	%	80 - 120
			Dissolved Vanadium (V)	2024/08/23		105	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/23		109	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/23		99	%	80 - 120
B489847	JAB	LCS	Total Aluminum (Al)	2024/08/24		117	%	80 - 120
			Total Chromium (Cr)	2024/08/24		96	%	80 - 120
			Total Cobalt (Co)	2024/08/24		98	%	80 - 120
			Total Copper (Cu)	2024/08/24		95	%	80 - 120
			Total Lead (Pb)	2024/08/24		102	%	80 - 120
			Total Antimony (Sb)	2024/08/24		99	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		101	%	80 - 120
			Total Nickel (Ni)	2024/08/24		96	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		99	%	80 - 120
			Total Arsenic (As)	2024/08/24		91	%	80 - 120
			Total Thallium (Tl)	2024/08/24		105	%	80 - 120
			Total Tin (Sn)	2024/08/24		105	%	80 - 120
			Total Titanium (Ti)	2024/08/24		95	%	80 - 120
			Total Uranium (U)	2024/08/24		103	%	80 - 120
			Total Vanadium (V)	2024/08/24		98	%	80 - 120
			Total Zinc (Zn)	2024/08/24		87	%	80 - 120
			Total Beryllium (Be)	2024/08/24		101	%	80 - 120
B489849	JAB	LCS	Total Iron (Fe)	2024/08/23		101	%	80 - 120
			Total Lithium (Li)	2024/08/23		95	%	80 - 120
			Total Magnesium (Mg)	2024/08/23		104	%	80 - 120
			Total Manganese (Mn)	2024/08/23		101	%	80 - 120
			Total Potassium (K)	2024/08/23		96	%	80 - 120
			Total Sodium (Na)	2024/08/23		95	%	80 - 120
			Total Strontium (Sr)	2024/08/23		97	%	80 - 120
			Total Sulphur (S)	2024/08/23		100	%	80 - 120
			Total Phosphorus (P)	2024/08/23		100	%	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
			Total Barium (Ba)	2024/08/23		100	%	80 - 120
			Total Silicon (Si)	2024/08/23		99	%	80 - 120
			Total Boron (B)	2024/08/23		93	%	80 - 120
			Total Calcium (Ca)	2024/08/23		97	%	80 - 120
B487800	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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.

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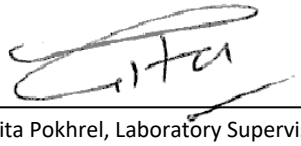
Bureau Veritas Job #: C464046
Report Date: 2024/08/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

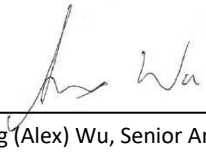
VALIDATION SIGNATURE PAGE

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

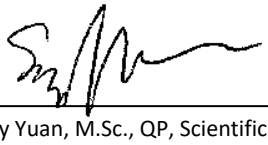
Elizabeth Chacko, Senior Analyst, Organics



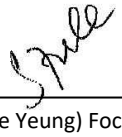
Gita Pokhrel, Laboratory Supervisor



Qiliang (Alex) Wu, Senior Analyst



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



Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

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VALIDATION SIGNATURE PAGE(CONT'D)

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

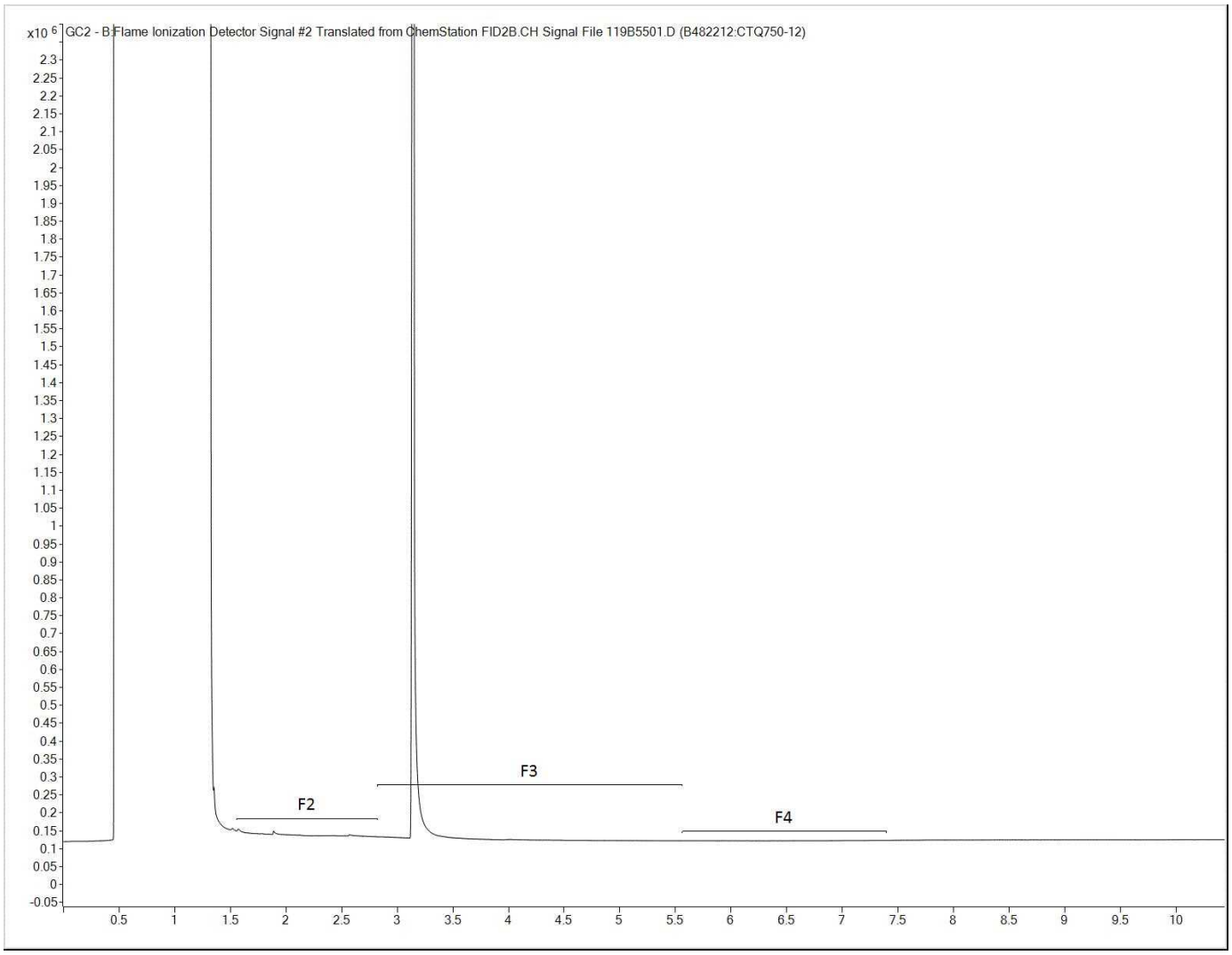
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

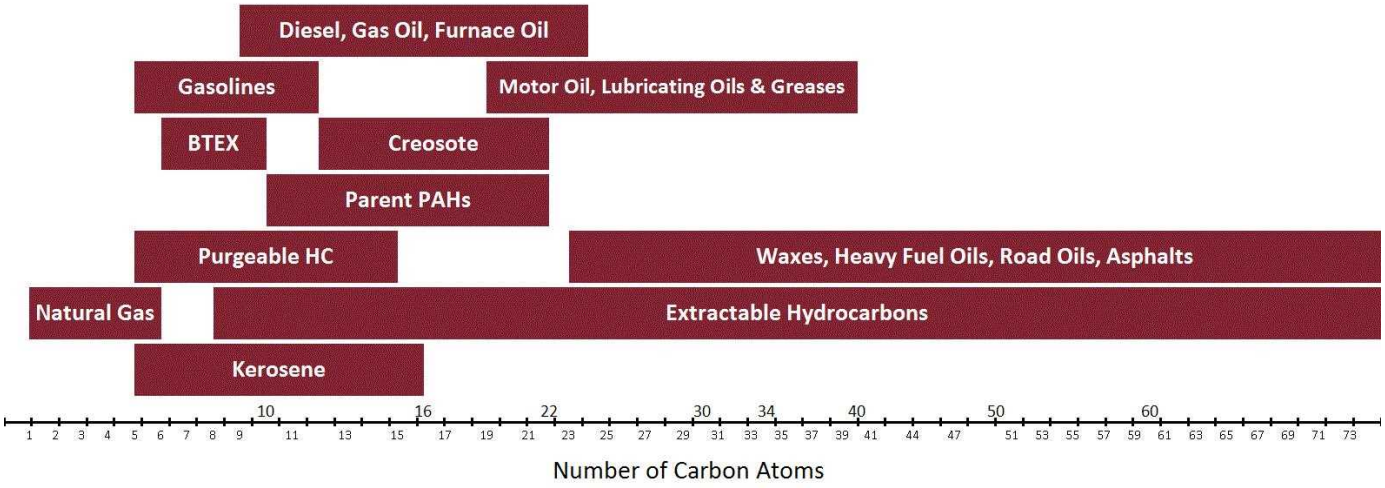
Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464046
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ750

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-03

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





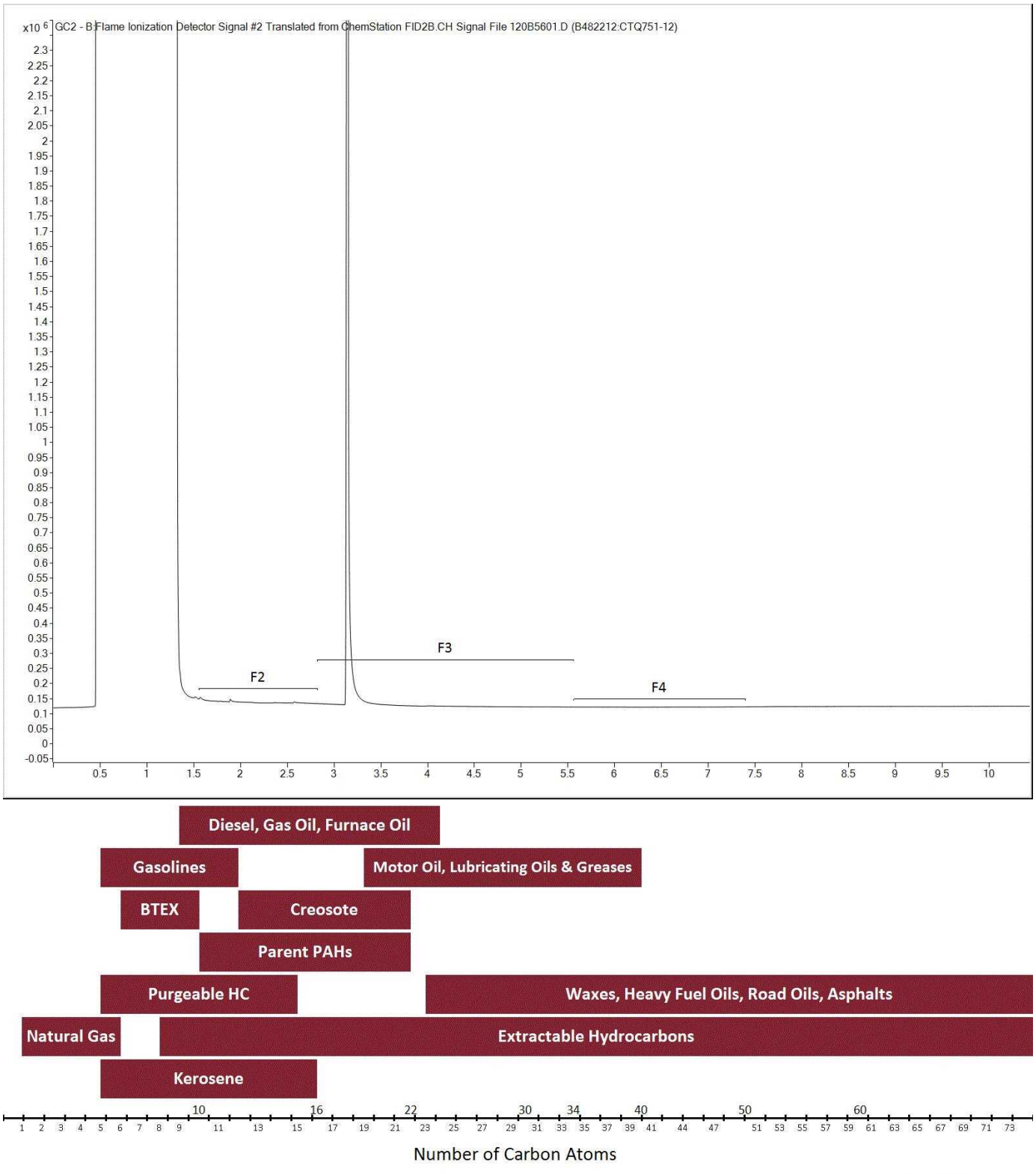
hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Bureau Veritas Job #: C464046
Report Date: 2024/08/26
Bureau Veritas Sample: CTQ751

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-04

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem12\HPchem\1\DATA\2024\08\RUN0821

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

Maxxam
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EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292214

INVOICE INFORMATION

Company Name: ☒ Imperial Oil ☐ ExxonMobil
Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com
Ph: 587-897-6249
Sampler Name (Print): Stacy Gibb / Nav Hari

REPORT INFORMATION

Company Name: Worley
Contact Name: Alex Haigh
Address: Same
Email: Same
Ph: Same
Consultant Project #: 417085-54419-24200

ANALYSIS REQUESTED

FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	Oil + Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (Total/Tkn)	Orthophosphate	Sulphur - Total + Dissolved	COD	Alkylated, PAH, TPH
1 AEMP-DS-03		X			18	2024/08/15	11:20	X			X	X							X	X					X			X	X	X	X	X	X	X
2 AEMP-US-04		X			18	2024/08/16	16:03	X			X	X							X	X					X			X	X	X	X	X	X	X
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		

med2-2024-08-501

IOL SITE LOCATION: Norman Wells, NWT
IOL PROJECT # (if applicable): N/A
MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS
Email:- canada.chemistry@worley ~~=IORdatatrack@worley.com~~
Cc/cl - IORdatatrack@worley.com
Stacy.gibb@worley.com
IFS A2601436

JARS USED & NOT SUBMITTED
Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

LAB USE ONLY
MAXXAM JOB # C4604046

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	5	4	4
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID # MEAL			
SEAL PRESENT	✓		TEMP °C	3.4	3.6	4.1
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/08/19	10:10	1.	BRENTON MAH	2024/08/19	12:54
2.	BRENTON MAH	2024/08/19	18:00	2.	NAVDEEP GILL	2024/08/20	07:00
3.				3.			

SAMPLES
LABELED BY: AHQ
VERIFIED BY: EPL

COC-1010 (06/2016) IOL-AB
White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200
Your C.O.C. #: 292217

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547327
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464054
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200
Your C.O.C. #: 292217

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547327
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464054
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200
Your C.O.C. #: 292217

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547327
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464054

Received: 2024/08/19, 12:54

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
28 Aug 2024 08:06:48

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTQ775	CTQ776		
Sampling Date		2024/08/16 15:20	2024/08/15 12:59		
COC Number		292217	292217		
	UNITS	**AEMP-US-05**	**AEMP-DS-05**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B485501
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B486488
Toluene	mg/L	<0.00040	<0.00040	0.00040	B486488
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B486488
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B486488
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B486488
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B485425
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B485425
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B486488
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	93	91		B485501
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	103	101		B486488
4-Bromofluorobenzene (sur.)	%	97	98		B486488
D4-1,2-Dichloroethane (sur.)	%	105	101		B486488
RDL = Reportable Detection Limit					

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TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTQ775		CTQ776		
Sampling Date		2024/08/16 15:20		2024/08/15 12:59		
COC Number		292217		292217		
	UNITS	**AEMP-US-05**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Calculated Parameters						
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.17	B485468	0.14	0.020	B485468
Nutrients						
Total Nitrogen (N)	mg/L	0.22	B487833	0.20	0.020	B487800
RDL = Reportable Detection Limit						

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ775		CTQ776		
Sampling Date		2024/08/16 15:20		2024/08/15 12:59		
COC Number		292217		292217		
	UNITS	**AEMP-US-05**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	<0.000020	B485433	0.000037	0.000020	B485433
Total Mercury (Hg)	ug/L	<0.0019	B487142	<0.0019	0.0019	B487142
Total Aluminum (Al)	mg/L	0.017	B489847	0.47	0.0030	B490260
Total Antimony (Sb)	mg/L	<0.00060	B489847	<0.00060	0.00060	B490260
Total Arsenic (As)	mg/L	<0.00020	B489847	0.00051	0.00020	B490260
Total Barium (Ba)	mg/L	0.085	B489849	0.060	0.010	B490261
Total Beryllium (Be)	mg/L	<0.0010	B489847	<0.0010	0.0010	B490260
Total Boron (B)	mg/L	0.046	B489849	<0.020	0.020	B490261
Total Calcium (Ca)	mg/L	88	B489849	39	0.30	B490261
Total Chromium (Cr)	mg/L	<0.0010	B489847	<0.0010	0.0010	B490260
Total Cobalt (Co)	mg/L	<0.00030	B489847	0.00035	0.00030	B490260
Total Copper (Cu)	mg/L	<0.0010	B489847	0.0019	0.0010	B490260
Total Iron (Fe)	mg/L	<0.060	B489849	0.68	0.060	B490261
Total Lead (Pb)	mg/L	<0.00020	B489847	0.00052	0.00020	B490260
Total Lithium (Li)	mg/L	<0.020	B489849	<0.020	0.020	B490261
Total Magnesium (Mg)	mg/L	35	B489849	11	0.20	B490261
Total Manganese (Mn)	mg/L	0.0073	B489849	0.023	0.0040	B490261
Total Molybdenum (Mo)	mg/L	0.0019	B489847	0.0011	0.00020	B490260
Total Nickel (Ni)	mg/L	0.00054	B489847	0.0021	0.00050	B490260
Total Phosphorus (P)	mg/L	<0.10	B489849	<0.10	0.10	B490261
Total Potassium (K)	mg/L	1.3	B489849	1.1	0.30	B490261
Total Selenium (Se)	mg/L	<0.00020	B489847	0.00041	0.00020	B490260
Total Silicon (Si)	mg/L	2.3	B489849	3.2	0.50	B490261
Total Silver (Ag)	mg/L	<0.00010	B489847	<0.00010	0.00010	B490260
Total Sodium (Na)	mg/L	33	B489849	7.8	0.50	B490261
Total Strontium (Sr)	mg/L	1.7	B489849	0.23	0.020	B490261
Total Sulphur (S)	mg/L	61	B489849	15	0.20	B490261
Total Thallium (Tl)	mg/L	<0.00020	B489847	<0.00020	0.00020	B490260
Total Tin (Sn)	mg/L	<0.0010	B489847	<0.0010	0.0010	B490260
Total Titanium (Ti)	mg/L	<0.0010	B489847	0.020	0.0010	B490260
Total Uranium (U)	mg/L	0.0012	B489847	0.00087	0.00010	B490260
RDL = Reportable Detection Limit						

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ775		CTQ776		
Sampling Date		2024/08/16 15:20		2024/08/15 12:59		
COC Number		292217		292217		
	UNITS	**AEMP-US-05**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	<0.0010	B489847	0.0022	0.0010	B490260
Total Zinc (Zn)	mg/L	<0.0030	B489847	0.0043	0.0030	B490260
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ775			CTQ775			CTQ776		
Sampling Date		2024/08/16 15:20			2024/08/16 15:20			2024/08/15 12:59		
COC Number		292217			292217			292217		
	UNITS	**AEMP-US-05**	**RDL**	**QC Batch**	**AEMP-US-05 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	360	0.50	B485451				130	0.50	B485451
Ion Balance (% Difference)	%	0.087	N/A	B485457				5.9	N/A	B485457
Nitrate (N)	mg/L	0.050	0.010	B485463				0.059	0.010	B485463
Nitrate (NO3)	mg/L	0.22	0.044	B485460				0.26	0.044	B485460
Nitrite (NO2)	mg/L	<0.033	0.033	B485460				<0.033	0.033	B485460
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B485444				<0.0020	0.0020	B485444
Demand Parameters										
Chemical Oxygen Demand	mg/L	<10 (1)	10	B487785				13	10	B487785
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B485427				<0.000020	0.000020	B485427
Misc. Inorganics										
Conductivity	uS/cm	790	2.0	B486769	790	2.0	B486769	310	2.0	B486769
Dissolved Organic Carbon (C)	mg/L	3.3	0.50	B486452				3.0	0.50	B486452
pH	pH	8.32	N/A	B486759	8.36	N/A	B486759	7.82	N/A	B486759
Total Organic Carbon (C)	mg/L	2.2	0.50	B486502				3.0	0.50	B486502
Total Dissolved Solids	mg/L	500	10	B487415				180	10	B485896
Total Suspended Solids	mg/L	1.3	1.0	B487438				16	1.0	B487431
Anions										
Alkalinity (PP as CaCO3)	mg/L	1.4	1.0	B486754	2.7	1.0	B486754	<1.0	1.0	B486754
Alkalinity (Total as CaCO3)	mg/L	180	1.0	B486754	190	1.0	B486754	110	1.0	B486754
Bicarbonate (HCO3)	mg/L	220	1.0	B486754	220	1.0	B486754	130	1.0	B486754
Carbonate (CO3)	mg/L	1.7	1.0	B486754	3.2	1.0	B486754	<1.0	1.0	B486754
Hydroxide (OH)	mg/L	<1.0	1.0	B486754	<1.0	1.0	B486754	<1.0	1.0	B486754
Total Sulphide	mg/L	<0.0018	0.0018	B486259				<0.0018	0.0018	B486259
Chloride (Cl)	mg/L	38	1.0	B486504				8.4	1.0	B486504
Sulphate (SO4)	mg/L	180	5.0	B486504				48	1.0	B486504
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B486864				<0.015	0.015	B486864

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ775			CTQ775			CTQ776		
Sampling Date		2024/08/16 15:20			2024/08/16 15:20			2024/08/15 12:59		
COC Number		292217			292217			292217		
	UNITS	**AEMP-US-05**	**RDL**	**QC Batch**	**AEMP-US-05 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486380				<0.0030	0.0030	B486383
Nitrite (N)	mg/L	<0.010	0.010	B486588				<0.010	0.010	B486588
Nitrate plus Nitrite (N)	mg/L	0.050	0.010	B486588				0.059	0.010	B486588
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B485334				<2.0	2.0	B485334
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B485250				<2.0	2.0	B485250
Physical Properties										
True Colour	PtCo units	2.3	2.0	B486456				6.3	2.0	B486456
Physical Properties										
Turbidity	NTU	0.31	0.10	B485511				14	0.10	B485511

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CTQ776		
Sampling Date		2024/08/15 12:59		
COC Number		292217		
	UNITS	**AEMP-DS-05 Lab-Dup**	**RDL**	**QC Batch**
Nutrients				
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486383

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ775	CTQ776		
Sampling Date		2024/08/16 15:20	2024/08/15 12:59		
COC Number		292217	292217		
	UNITS	**AEMP-US-05**	**AEMP-DS-05**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B485187
Acenaphthene	ug/L	<0.10	<0.10	0.10	B485499
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B485499
Acridine	ug/L	<0.040	<0.040	0.040	B485499
Anthracene	ug/L	<0.010	<0.010	0.010	B485499
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B485499
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B485499
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B485499
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B485499
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B485499
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B485499
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B485499
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B485499
Fluoranthene	ug/L	<0.010	<0.010	0.010	B485499
Fluorene	ug/L	<0.050	<0.050	0.050	B485499
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B485499
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B485499
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B485499
Naphthalene	ug/L	<0.10	<0.10	0.10	B485499
Phenanthrene	ug/L	<0.050	<0.050	0.050	B485499
Perylene	ug/L	<0.050	<0.050	0.050	B485499
Pyrene	ug/L	<0.020	<0.020	0.020	B485499
Quinoline	ug/L	<0.20	<0.20	0.20	B485499
Retene	ug/L	<0.050	<0.050	0.050	B485499
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499
Biphenyl	ug/L	<0.020	<0.020	0.020	B485499
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B485499
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ775	CTQ776		
Sampling Date		2024/08/16 15:20	2024/08/15 12:59		
COC Number		292217	292217		
	UNITS	**AEMP-US-05**	**AEMP-DS-05**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B485499
C1-fluorene	ug/L	<0.050	<0.050	0.050	B485499
C2-fluorene	ug/L	<0.050	<0.050	0.050	B485499
C3-fluorene	ug/L	<0.050	<0.050	0.050	B485499
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B485499
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B485499
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B485499
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B485499
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	100	97		B485499
D8-ACENAPHTHYLENE (sur.)	%	85	81		B485499
D8-NAPHTHALENE (sur.)	%	97	94		B485499
TERPHENYL-D14 (sur.)	%	94	90		B485499
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTQ775	CTQ776		
Sampling Date		2024/08/16 15:20	2024/08/15 12:59		
COC Number		292217	292217		
	UNITS	**AEMP-US-05**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B486666
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ775			CTQ775			CTQ776		
Sampling Date		2024/08/16 15:20			2024/08/16 15:20			2024/08/15 12:59		
COC Number		292217			292217			292217		
	UNITS	**AEMP-US-05**	**RDL**	**QC Batch**	**AEMP-US-05 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements										
Dissolved Aluminum (Al)	mg/L	0.0030	0.0030	B488054	0.0031	0.0030	B488054	0.035	0.0030	B488054
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	B488054	<0.00060	0.00060	B488054	<0.00060	0.00060	B488054
Dissolved Arsenic (As)	mg/L	<0.00020	0.00020	B488054	<0.00020	0.00020	B488054	0.00043	0.00020	B488054
Dissolved Barium (Ba)	mg/L	0.083	0.010	B486815				0.045	0.010	B486815
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Boron (B)	mg/L	0.034	0.020	B486815				<0.020	0.020	B486815
Dissolved Calcium (Ca)	mg/L	87	0.30	B486815				36	0.30	B486815
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00030	B488054	<0.00030	0.00030	B488054	<0.00030	0.00030	B488054
Dissolved Copper (Cu)	mg/L	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054	0.0037	0.0010	B488054
Dissolved Iron (Fe)	mg/L	<0.060	0.060	B486815				<0.060	0.060	B486815
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	B488054	<0.00020	0.00020	B488054	<0.00020	0.00020	B488054
Dissolved Lithium (Li)	mg/L	0.024	0.020	B486815				0.021	0.020	B486815
Dissolved Magnesium (Mg)	mg/L	34	0.20	B486815				11	0.20	B486815
Dissolved Manganese (Mn)	mg/L	0.0056	0.0040	B486815				<0.0040	0.0040	B486815
Dissolved Molybdenum (Mo)	mg/L	0.0018	0.00020	B488054	0.0020	0.00020	B488054	0.00098	0.00020	B488054
Dissolved Nickel (Ni)	mg/L	<0.00050	0.00050	B488054	0.00076	0.00050	B488054	0.0010	0.00050	B488054
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	B486815				<0.10	0.10	B486815
Dissolved Potassium (K)	mg/L	1.3	0.30	B486815				0.96	0.30	B486815
Dissolved Selenium (Se)	mg/L	0.00023	0.00020	B488054	<0.00020	0.00020	B488054	0.00039	0.00020	B488054
Dissolved Silicon (Si)	mg/L	2.2	0.50	B486815				1.6	0.50	B486815
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	B488054	<0.00010	0.00010	B488054	<0.00010	0.00010	B488054
Dissolved Sodium (Na)	mg/L	33	0.50	B486815				7.9	0.50	B486815
Dissolved Strontium (Sr)	mg/L	1.6	0.020	B486815				0.22	0.020	B486815
Dissolved Sulphur (S)	mg/L	61	0.20	B486815				15	0.20	B486815
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	B488054	<0.00020	0.00020	B488054	<0.00020	0.00020	B488054
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Uranium (U)	mg/L	0.0012	0.00010	B488054	0.0012	0.00010	B488054	0.00078	0.00010	B488054
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054	<0.0010	0.0010	B488054

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ775			CTQ775			CTQ776		
Sampling Date		2024/08/16 15:20			2024/08/16 15:20			2024/08/15 12:59		
COC Number		292217			292217			292217		
	UNITS	**AEMP-US-05**	**RDL**	**QC Batch**	**AEMP-US-05 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	B488054	<0.0030	0.0030	B488054	<0.0030	0.0030	B488054

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ775
Sample ID: AEMP-US-05
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B486488	N/A	2024/08/23	Darrus Ong
F1-BTEX	CALC/MS	B485425	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B485427	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B485433	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B485501	2024/08/23	2024/08/23	Vian Pereira
Sulphide (as H2S)	CALC	B485444	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B485451	N/A	2024/08/21	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B486815	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/24	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B485457	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486864	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B485460	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B485463	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B485499	2024/08/23	2024/08/23	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B485187	N/A	2024/08/26	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B487415	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B485468	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487833	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487438	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ775 Dup
Sample ID: AEMP-US-05
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ775 Dup
Sample ID: AEMP-US-05
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha

Bureau Veritas ID: CTQ776
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B486488	N/A	2024/08/23	Darrus Ong
F1-BTEX	CALC/MS	B485425	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B485427	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B485433	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B485501	2024/08/23	2024/08/23	Vian Pereira
Sulphide (as H2S)	CALC	B485444	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B485451	N/A	2024/08/21	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B486815	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B490261	2024/08/23	2024/08/24	Kristijan Kovac
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B490260	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B485457	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486864	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B485460	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B485463	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B485499	2024/08/23	2024/08/23	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B485187	N/A	2024/08/26	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486383	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B485896	2024/08/21	2024/08/23	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B485468	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ776
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Suspended Solids (NFR)	BAL	B487431	2024/08/22	2024/08/23	Haydee Estilong
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ776 Dup
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Orthophosphate by Automated Analyzer	KONE	B486383	N/A	2024/08/21	Mary Anne Dela Cruz

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GENERAL COMMENTS

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

Package 1	4.7°C

Sample CTQ775 [AEMP-US-05] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CTQ776 [AEMP-DS-05] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

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Bureau Veritas Job #: C464054
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS,NT
Project #: 417085-54419-24200

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B485250	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/26	<2.0		mg/L	
B485334	RRA	Method Blank	Oil and grease	2024/08/26	<2.0		mg/L	
B485499	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/23		104	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/23		96	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/23		88	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/23		100	%	50 - 130
			Acenaphthene	2024/08/23	<0.10		ug/L	
			Acenaphthylene	2024/08/23	<0.10		ug/L	
			Acridine	2024/08/23	<0.040		ug/L	
			Anthracene	2024/08/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/23	<0.050		ug/L	
			Chrysene	2024/08/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/23	<0.0075		ug/L	
			Fluoranthene	2024/08/23	<0.010		ug/L	
			Fluorene	2024/08/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/23	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/23	<0.10		ug/L	
			Naphthalene	2024/08/23	<0.10		ug/L	
			Phenanthrene	2024/08/23	<0.050		ug/L	
			Perylene	2024/08/23	<0.050		ug/L	
			Pyrene	2024/08/23	<0.020		ug/L	
			Quinoline	2024/08/23	<0.20		ug/L	
			Retene	2024/08/23	<0.050		ug/L	
			C1-Naphthalene	2024/08/23	<0.10		ug/L	
			C3-Naphthalene	2024/08/23	<0.10		ug/L	
			C4-Naphthalene	2024/08/23	<0.10		ug/L	
			C2-Naphthalene	2024/08/23	<0.10		ug/L	
			Biphenyl	2024/08/23	<0.020		ug/L	
			C1-biphenyl	2024/08/23	<0.020		ug/L	
			C2-biphenyl	2024/08/23	<0.020		ug/L	
			C1-fluorene	2024/08/23	<0.050		ug/L	
			C2-fluorene	2024/08/23	<0.050		ug/L	
			C3-fluorene	2024/08/23	<0.050		ug/L	
			Dibenzothiophene	2024/08/23	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C4 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/23	<0.10		ug/L	
B485501	VP4	Method Blank	O-TERPHENYL (sur.)	2024/08/23		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/23	<0.10		mg/L	
B485511	AP1	Method Blank	Turbidity	2024/08/20	<0.10		NTU	
B485896	HE1	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B486259	LYV	Method Blank	Total Sulphide	2024/08/21	<0.0018		mg/L	
B486380	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486383	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486452	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486456	MOP	Method Blank	True Colour	2024/08/21	<2.0		PtCo units	
B486488	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/23		102	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/23		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/23		104	%	50 - 140
			Benzene	2024/08/23	<0.00040		mg/L	
			Toluene	2024/08/23	<0.00040		mg/L	
			Ethylbenzene	2024/08/23	<0.00040		mg/L	
			m & p-Xylene	2024/08/23	<0.00080		mg/L	
			o-Xylene	2024/08/23	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/23	<0.10		mg/L	
B486502	JYU	Method Blank	Total Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486504	TOR	Method Blank	Chloride (Cl)	2024/08/21	<1.0		mg/L	
			Sulphate (SO4)	2024/08/21	<1.0		mg/L	
B486588	AFI	Method Blank	Nitrite (N)	2024/08/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/21	<0.010		mg/L	
B486666	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486754	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/23	<1.0		mg/L	
			Carbonate (CO3)	2024/08/23	<1.0		mg/L	
			Hydroxide (OH)	2024/08/23	<1.0		mg/L	
B486769	AYE	Method Blank	Conductivity	2024/08/23	<2.0		uS/cm	
B486815	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B486864	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B487142	KHU	Method Blank	Total Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B487415	TNY	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B487431	HE1	Method Blank	Total Suspended Solids	2024/08/23	<1.0		mg/L	
B487438	TNY	Method Blank	Total Suspended Solids	2024/08/23	<0.99		mg/L	
B487785	AP1	Method Blank	Chemical Oxygen Demand	2024/08/22	<10		mg/L	
B487800	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B487833	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B488054	KH2	Method Blank	Dissolved Aluminum (Al)	2024/08/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/22	<0.0010		mg/L	
B489847	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B489849	JAB	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B490260	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B490261	KKC	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B486754	AYE	RPD [CTQ775-02]	Alkalinity (Total as CaCO3)	2024/08/23	2.0		%	20
			Alkalinity (PP as CaCO3)	2024/08/23	NC		%	20
			Bicarbonate (HCO3)	2024/08/23	0.62		%	20
			Carbonate (CO3)	2024/08/23	NC		%	20
			Hydroxide (OH)	2024/08/23	NC		%	20
B486759	AYE	RPD [CTQ775-02]	pH	2024/08/23	0.46		%	N/A
B486769	AYE	RPD [CTQ775-02]	Conductivity	2024/08/23	0.13		%	10
B488054	KH2	RPD [CTQ775-04]	Dissolved Aluminum (Al)	2024/08/22	0.62		%	20
			Dissolved Chromium (Cr)	2024/08/22	NC		%	20
			Dissolved Cobalt (Co)	2024/08/22	NC		%	20
			Dissolved Copper (Cu)	2024/08/22	NC		%	20
			Dissolved Lead (Pb)	2024/08/22	NC		%	20
			Dissolved Antimony (Sb)	2024/08/22	NC		%	20
			Dissolved Molybdenum (Mo)	2024/08/22	6.9		%	20
			Dissolved Nickel (Ni)	2024/08/22	NC		%	20
			Dissolved Selenium (Se)	2024/08/22	13		%	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 Silver (Ag)	2024/08/22	NC		%	20
			Dissolved Arsenic (As)	2024/08/22	NC		%	20
			Dissolved Thallium (Tl)	2024/08/22	NC		%	20
			Dissolved Tin (Sn)	2024/08/22	NC		%	20
			Dissolved Titanium (Ti)	2024/08/22	NC		%	20
			Dissolved Uranium (U)	2024/08/22	1.3		%	20
			Dissolved Vanadium (V)	2024/08/22	NC		%	20
			Dissolved Zinc (Zn)	2024/08/22	NC		%	20
			Dissolved Beryllium (Be)	2024/08/22	NC		%	20
B486383	MAP	RPD [CTQ776-02]	Orthophosphate (P)	2024/08/21	NC		%	20
B485501	VP4	Matrix Spike [CTQ775-12]	O-TERPHENYL (sur.)	2024/08/23		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/23		90	%	60 - 140
B486383	MAP	Matrix Spike [CTQ776-02]	Orthophosphate (P)	2024/08/21		99	%	80 - 120
B488054	KH2	Matrix Spike [CTQ775-04]	Dissolved Aluminum (Al)	2024/08/22		106	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/22		106	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/22		105	%	80 - 120
			Dissolved Copper (Cu)	2024/08/22		104	%	80 - 120
			Dissolved Lead (Pb)	2024/08/22		103	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/22		114	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/22		108	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/22		104	%	80 - 120
			Dissolved Selenium (Se)	2024/08/22		114	%	80 - 120
			Dissolved Silver (Ag)	2024/08/22		103	%	80 - 120
			Dissolved Arsenic (As)	2024/08/22		116	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/22		103	%	80 - 120
			Dissolved Tin (Sn)	2024/08/22		106	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/22		108	%	80 - 120
			Dissolved Uranium (U)	2024/08/22		108	%	80 - 120
			Dissolved Vanadium (V)	2024/08/22		109	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/22		115	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/22		102	%	80 - 120
B489849	JAB	Matrix Spike [CTQ775-03]	Total Iron (Fe)	2024/08/23		102	%	80 - 120
			Total Lithium (Li)	2024/08/23		96	%	80 - 120
			Total Magnesium (Mg)	2024/08/23		105	%	80 - 120
			Total Manganese (Mn)	2024/08/23		102	%	80 - 120
			Total Potassium (K)	2024/08/23		97	%	80 - 120
			Total Sodium (Na)	2024/08/23		90	%	80 - 120
			Total Strontium (Sr)	2024/08/23		95	%	80 - 120
			Total Sulphur (S)	2024/08/23		NC	%	80 - 120
			Total Phosphorus (P)	2024/08/23		102	%	80 - 120
			Total Barium (Ba)	2024/08/23		101	%	80 - 120
			Total Silicon (Si)	2024/08/23		101	%	80 - 120
			Total Boron (B)	2024/08/23		95	%	80 - 120
			Total Calcium (Ca)	2024/08/23		NC	%	80 - 120
B485250	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/26		94	%	70 - 130
B485334	RRA	LCS	Oil and grease	2024/08/26		92	%	70 - 130
B485499	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/23		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/23		101	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/23		101	%	50 - 130
			Acenaphthene	2024/08/23		96	%	50 - 130
			Acenaphthylene	2024/08/23		94	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acridine	2024/08/23		94	%	50 - 130
			Anthracene	2024/08/23		92	%	50 - 130
			Benzo(a)anthracene	2024/08/23		91	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/23		92	%	50 - 130
			Benzo(k)fluoranthene	2024/08/23		115	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/08/23		93	%	50 - 130
			Benzo(a)pyrene	2024/08/23		92	%	50 - 130
			Benzo(e)pyrene	2024/08/23		84	%	50 - 130
			Chrysene	2024/08/23		101	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/23		91	%	50 - 130
			Fluoranthene	2024/08/23		96	%	50 - 130
			Fluorene	2024/08/23		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/23		85	%	50 - 130
			2-Methylnaphthalene	2024/08/23		95	%	50 - 130
			Naphthalene	2024/08/23		96	%	50 - 130
			Phenanthrene	2024/08/23		97	%	50 - 130
			Perylene	2024/08/23		89	%	50 - 130
			Pyrene	2024/08/23		97	%	50 - 130
			Quinoline	2024/08/23		109	%	50 - 130
			C1-Naphthalene	2024/08/23		83	%	50 - 130
			C3-Naphthalene	2024/08/23		93	%	50 - 130
			C2-Naphthalene	2024/08/23		96	%	50 - 130
			C1-biphenyl	2024/08/23		93	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/23		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/23		93	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/23		92	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/23		94	%	30 - 130
			1-Methylnaphthalene	2024/08/23		83	%	50 - 130
B485501	VP4	LCS	O-TERPHENYL (sur.)	2024/08/24		94	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/24		88	%	60 - 140
B485511	AP1	LCS	Turbidity	2024/08/20		100	%	80 - 120
B485896	HE1	LCS	Total Dissolved Solids	2024/08/23		96	%	80 - 120
B486259	LYV	LCS	Total Sulphide	2024/08/21		105	%	80 - 120
B486380	MAP	LCS	Orthophosphate (P)	2024/08/21		100	%	80 - 120
B486383	MAP	LCS	Orthophosphate (P)	2024/08/21		99	%	80 - 120
B486452	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/21		101	%	80 - 120
B486456	MOP	LCS	True Colour	2024/08/21		94	%	80 - 120
B486488	DO1	LCS	1,4-Difluorobenzene (sur.)	2024/08/23		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/23		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/23		104	%	50 - 140
			Benzene	2024/08/23		91	%	60 - 130
			Toluene	2024/08/23		89	%	60 - 130
			Ethylbenzene	2024/08/23		93	%	60 - 130
			m & p-Xylene	2024/08/23		92	%	60 - 130
			o-Xylene	2024/08/23		92	%	60 - 130
			F1 (C6-C10)	2024/08/23		95	%	60 - 140
B486502	JYU	LCS	Total Organic Carbon (C)	2024/08/21		99	%	80 - 120
B486504	TOR	LCS	Chloride (Cl)	2024/08/21		101	%	80 - 120
			Sulphate (SO4)	2024/08/21		100	%	80 - 120
B486588	AFI	LCS	Nitrite (N)	2024/08/21		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		102	%	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
B486666	KHU	LCS	Dissolved Mercury (Hg)	2024/08/22		96	%	80 - 120
B486754	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/23		102	%	80 - 120
B486759	AYE	LCS	pH	2024/08/23		100	%	97 - 103
B486769	AYE	LCS	Conductivity	2024/08/23		96	%	90 - 110
B486815	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		99	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		92	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		98	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		95	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		96	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		95	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		94	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		97	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		98	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		91	%	80 - 120
			Dissolved Boron (B)	2024/08/21		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		96	%	80 - 120
B486864	AFI	LCS	Total Ammonia (N)	2024/08/21		102	%	80 - 120
B487142	KHU	LCS	Total Mercury (Hg)	2024/08/22		92	%	80 - 120
B487415	TNY	LCS	Total Dissolved Solids	2024/08/23		99	%	80 - 120
B487431	HE1	LCS	Total Suspended Solids	2024/08/23		99	%	80 - 120
B487438	TNY	LCS	Total Suspended Solids	2024/08/23		92	%	80 - 120
B487785	AP1	LCS	Chemical Oxygen Demand	2024/08/22		100	%	80 - 120
B487800	YL7	LCS	Total Nitrogen (N)	2024/08/22		107	%	80 - 120
B487833	YL7	LCS	Total Nitrogen (N)	2024/08/22		105	%	80 - 120
B488054	KH2	LCS	Dissolved Aluminum (Al)	2024/08/23		109	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/23		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/23		103	%	80 - 120
			Dissolved Copper (Cu)	2024/08/23		105	%	80 - 120
			Dissolved Lead (Pb)	2024/08/23		101	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/23		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/23		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/23		102	%	80 - 120
			Dissolved Selenium (Se)	2024/08/23		110	%	80 - 120
			Dissolved Silver (Ag)	2024/08/23		102	%	80 - 120
			Dissolved Arsenic (As)	2024/08/23		108	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/23		99	%	80 - 120
			Dissolved Tin (Sn)	2024/08/23		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/23		101	%	80 - 120
			Dissolved Uranium (U)	2024/08/23		103	%	80 - 120
			Dissolved Vanadium (V)	2024/08/23		105	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/23		109	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/23		99	%	80 - 120
B489847	JAB	LCS	Total Aluminum (Al)	2024/08/24		117	%	80 - 120
			Total Chromium (Cr)	2024/08/24		96	%	80 - 120
			Total Cobalt (Co)	2024/08/24		98	%	80 - 120
			Total Copper (Cu)	2024/08/24		95	%	80 - 120
			Total Lead (Pb)	2024/08/24		102	%	80 - 120
			Total Antimony (Sb)	2024/08/24		99	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		101	%	80 - 120
			Total Nickel (Ni)	2024/08/24		96	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	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
			Total Silver (Ag)	2024/08/24		99	%	80 - 120
			Total Arsenic (As)	2024/08/24		91	%	80 - 120
			Total Thallium (Tl)	2024/08/24		105	%	80 - 120
			Total Tin (Sn)	2024/08/24		105	%	80 - 120
			Total Titanium (Ti)	2024/08/24		95	%	80 - 120
			Total Uranium (U)	2024/08/24		103	%	80 - 120
			Total Vanadium (V)	2024/08/24		98	%	80 - 120
			Total Zinc (Zn)	2024/08/24		87	%	80 - 120
			Total Beryllium (Be)	2024/08/24		101	%	80 - 120
B489849	JAB	LCS	Total Iron (Fe)	2024/08/23		101	%	80 - 120
			Total Lithium (Li)	2024/08/23		95	%	80 - 120
			Total Magnesium (Mg)	2024/08/23		104	%	80 - 120
			Total Manganese (Mn)	2024/08/23		101	%	80 - 120
			Total Potassium (K)	2024/08/23		96	%	80 - 120
			Total Sodium (Na)	2024/08/23		95	%	80 - 120
			Total Strontium (Sr)	2024/08/23		97	%	80 - 120
			Total Sulphur (S)	2024/08/23		100	%	80 - 120
			Total Phosphorus (P)	2024/08/23		100	%	80 - 120
			Total Barium (Ba)	2024/08/23		100	%	80 - 120
			Total Silicon (Si)	2024/08/23		99	%	80 - 120
			Total Boron (B)	2024/08/23		93	%	80 - 120
			Total Calcium (Ca)	2024/08/23		97	%	80 - 120
B490260	JAB	LCS	Total Aluminum (Al)	2024/08/24		105	%	80 - 120
			Total Chromium (Cr)	2024/08/24		89	%	80 - 120
			Total Cobalt (Co)	2024/08/24		90	%	80 - 120
			Total Copper (Cu)	2024/08/24		87	%	80 - 120
			Total Lead (Pb)	2024/08/24		97	%	80 - 120
			Total Antimony (Sb)	2024/08/24		101	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		96	%	80 - 120
			Total Nickel (Ni)	2024/08/24		88	%	80 - 120
			Total Selenium (Se)	2024/08/24		88	%	80 - 120
			Total Silver (Ag)	2024/08/24		92	%	80 - 120
			Total Arsenic (As)	2024/08/24		89	%	80 - 120
			Total Thallium (Tl)	2024/08/24		96	%	80 - 120
			Total Tin (Sn)	2024/08/24		100	%	80 - 120
			Total Titanium (Ti)	2024/08/24		86	%	80 - 120
			Total Uranium (U)	2024/08/24		98	%	80 - 120
			Total Vanadium (V)	2024/08/24		92	%	80 - 120
			Total Zinc (Zn)	2024/08/24		84	%	80 - 120
			Total Beryllium (Be)	2024/08/24		93	%	80 - 120
B490261	KKC	LCS	Total Iron (Fe)	2024/08/24		104	%	80 - 120
			Total Lithium (Li)	2024/08/24		99	%	80 - 120
			Total Magnesium (Mg)	2024/08/24		99	%	80 - 120
			Total Manganese (Mn)	2024/08/24		102	%	80 - 120
			Total Potassium (K)	2024/08/24		99	%	80 - 120
			Total Sodium (Na)	2024/08/24		98	%	80 - 120
			Total Strontium (Sr)	2024/08/24		96	%	80 - 120
			Total Sulphur (S)	2024/08/24		94	%	80 - 120
			Total Phosphorus (P)	2024/08/24		97	%	80 - 120
			Total Barium (Ba)	2024/08/24		98	%	80 - 120
			Total Silicon (Si)	2024/08/24		100	%	80 - 120
			Total Boron (B)	2024/08/24		98	%	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
			Total Calcium (Ca)	2024/08/24		99	%	80 - 120
B487800	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120
B487833	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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).

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VALIDATION SIGNATURE PAGE

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

Elizabeth Chacko, Senior Analyst, Organics

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

Qiliang (Alex) Wu, Senior Analyst

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

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

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VALIDATION SIGNATURE PAGE(CONT'D)

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

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

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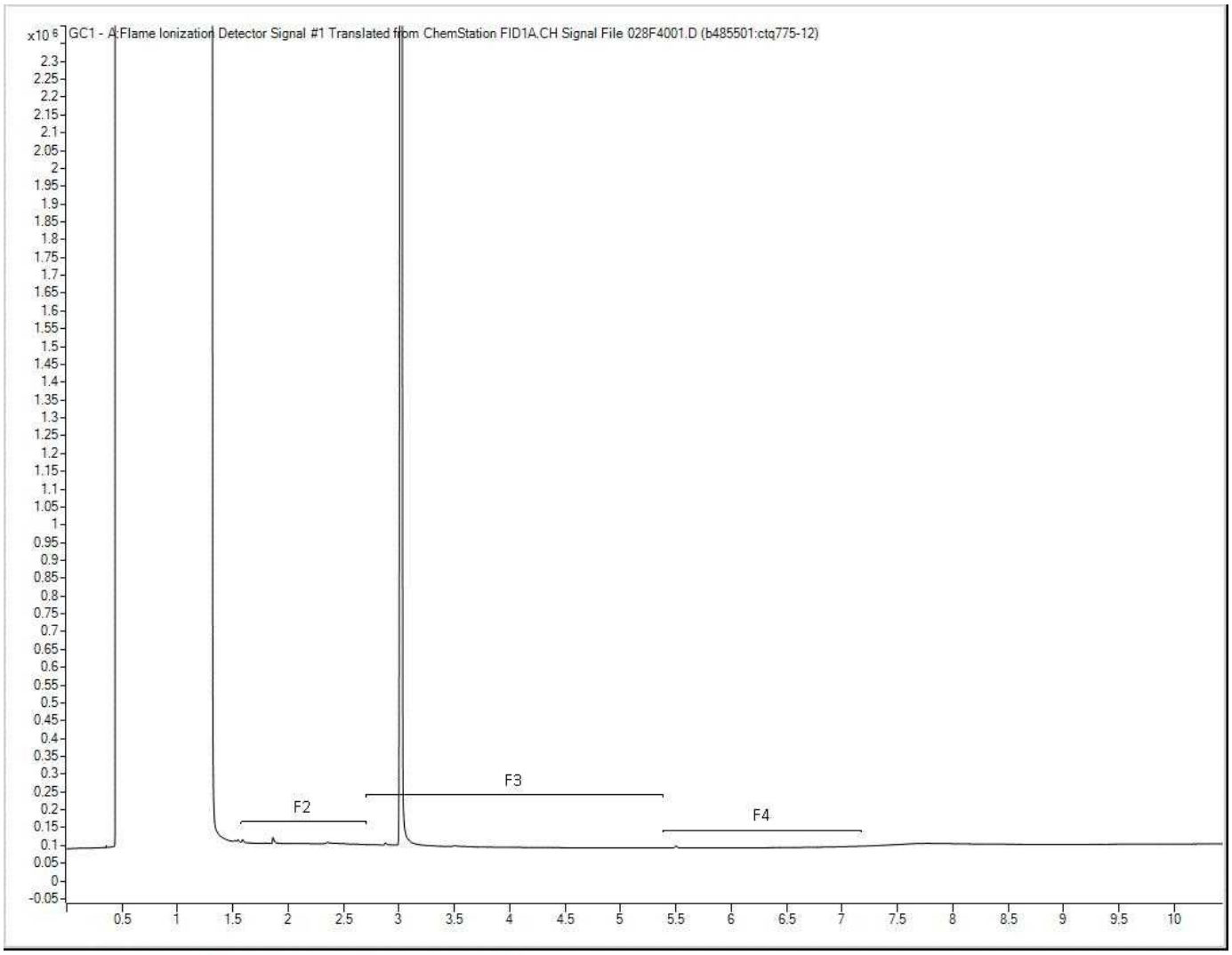
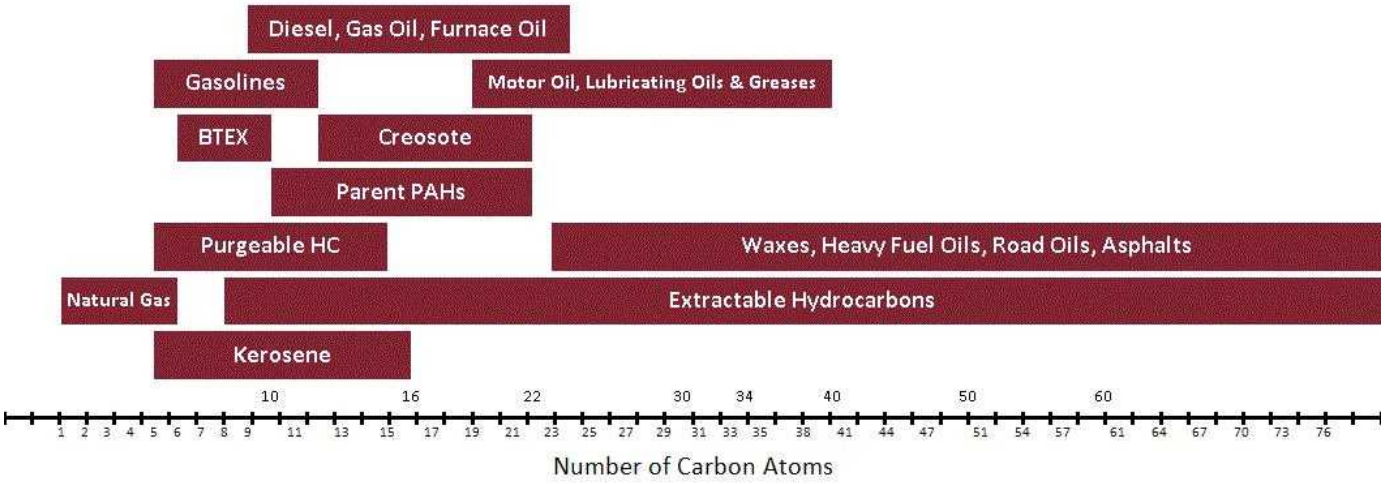
Bureau Veritas Job #: C464054
Report Date: 2024/08/27
Bureau Veritas Sample: CTQ775

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS,NT
Client ID: AEMP-US-05

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





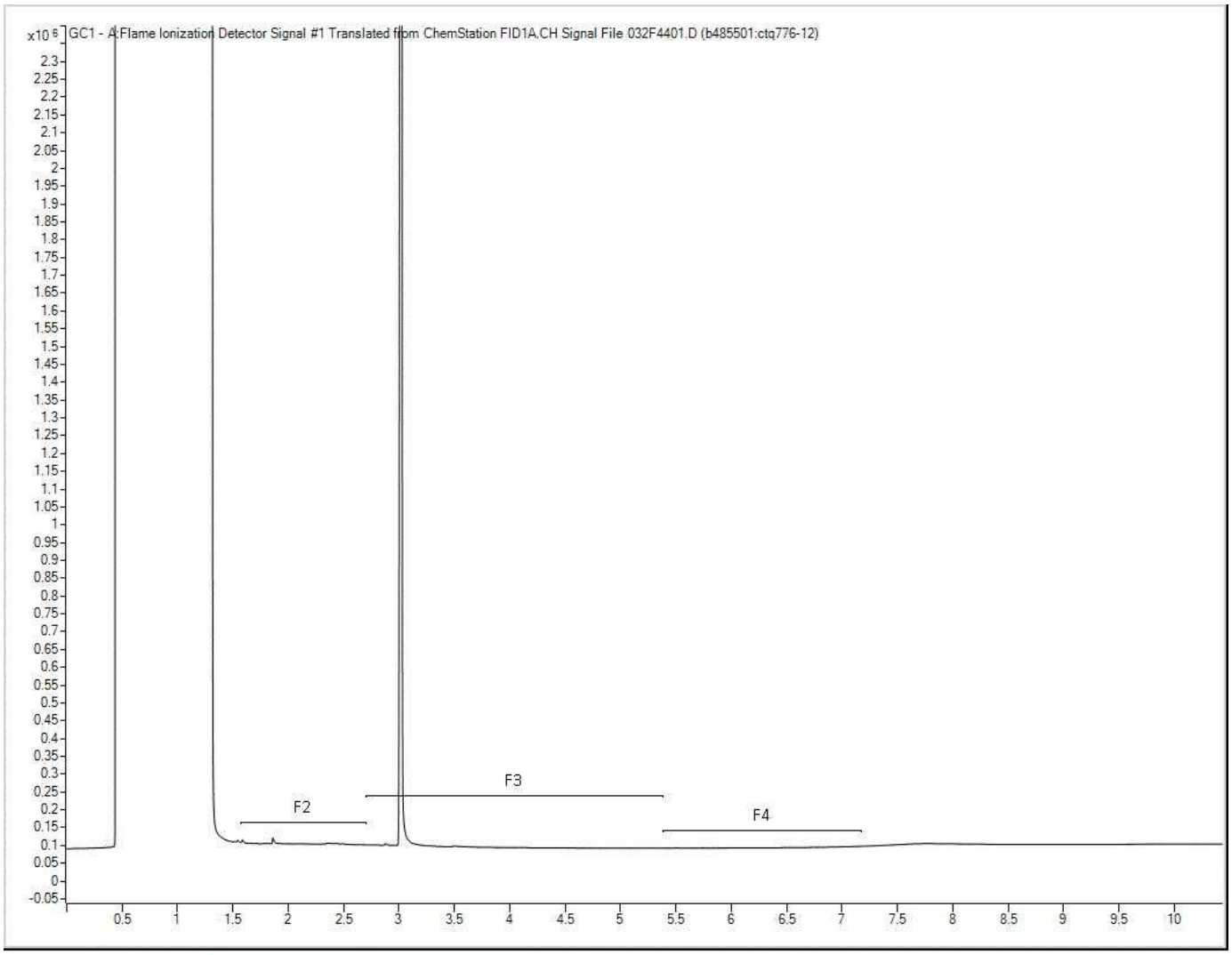
hpchem13\HPchem\1\DATA\2024\08\RUN0823

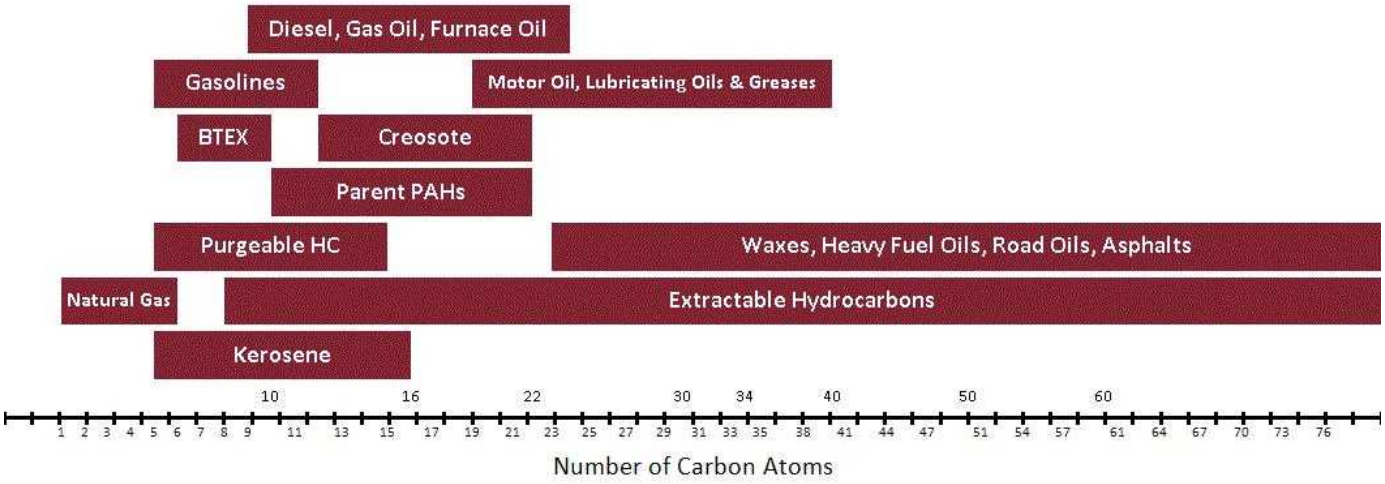
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C464054
Report Date: 2024/08/27
Bureau Veritas Sample: CTQ776

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS,NT
Client ID: AEMP-DS-05

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





hpchem13\HPchem\1\DATA\2024\08\RUN0823

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

Maxxam
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EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 292217

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Same
Address: 49 Quarry Park Blvd SE Calgary AB T2C 3E7	Address: Same
Email: alex.haigh@worley.com	Email: Same
Ph: 587-897-6249	Ph: Same
Sampler Name (Print): Stacy Gibb / Nav Hari	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	ANALYSIS REQUESTED: VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☐ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	Oil + Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (total) Thio	orthophosphate	Sulphur - Total + Dissolved	COD	Alkalinity, MAH, TPH
1	AEMP-US-05		X			18	2024/08/16	15:20	X			X	X								X	X					X									
2	AEMP-DS-05		X			18	2024/08/15	12:59	X			X	X								X	X					X									
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

MED2-2024-08-498

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: Emails canada.chemistry@worley.com Local_IOR datatrack@worley.com Stacy.Gibb@worley.com IES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

LAB USE ONLY
MAXXAM JOB #: C464054

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	4	4	6
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID # MCAL		
SEAL PRESENT	✓		TEMP °C	6.1	6.2	5.5
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	1	2	3
SEAL INTACT						
COOLING MEDIA PRESENT						

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/08/18	10:10	1.	BRENTON MAH	2024/08/19	12:54
2.	BRENTON MAH	2024/08/19	18:00	2.	NAVDEEP GILL	2024/08/20	07:50
3.				3.			

SAMPLES
LABELED BY: AHQ
VERIFIED BY: EPL

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200
Your C.O.C. #: 292212

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547328
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464059
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200
Your C.O.C. #: 292212

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547328
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464059
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200
Your C.O.C. #: 292212

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547328
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464059

Received: 2024/08/19, 12:54

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
28 Aug 2024 08:07:48

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTQ876	CTQ877			CTQ877		
Sampling Date		2024/08/16 13:31	2024/08/16 12:21			2024/08/16 12:21		
COC Number		292212	292212			292212		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B485501	<0.10	0.10	B485501
Volatiles								
Benzene	mg/L	<0.00040	<0.00040	0.00040	B486488			
Toluene	mg/L	<0.00040	<0.00040	0.00040	B486488			
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B486488			
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B486488			
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B486488			
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B485425			
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B485425			
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B486488			
Extraction Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	93	92		B485501	94		B485501
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	101	105		B486488			
4-Bromofluorobenzene (sur.)	%	97	97		B486488			
D4-1,2-Dichloroethane (sur.)	%	100	102		B486488			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTQ876			CTQ876			CTQ877		
Sampling Date		2024/08/16 13:31			2024/08/16 13:31			2024/08/16 12:21		
COC Number		292212			292212			292212		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Calculated Parameters										
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.11	0.020	B485465				0.37	0.20	B485468
Nutrients										
Total Nitrogen (N)	mg/L	0.16	0.020	B487800	0.15	0.020	B487800	0.43 (1)	0.20	B487833

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ876	CTQ877		
Sampling Date		2024/08/16 13:31	2024/08/16 12:21		
COC Number		292212	292212		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	<0.000020	0.00024	0.000020	B484349
Total Mercury (Hg)	ug/L	<0.0019	0.014	0.0019	B487142
Total Aluminum (Al)	mg/L	0.010	3.6	0.0030	B489847
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B489847
Total Arsenic (As)	mg/L	0.00021	0.0032	0.00020	B489847
Total Barium (Ba)	mg/L	0.087	0.16	0.010	B489849
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B489847
Total Boron (B)	mg/L	0.044	0.025	0.020	B489849
Total Calcium (Ca)	mg/L	83	60	0.30	B489849
Total Chromium (Cr)	mg/L	<0.0010	0.0051	0.0010	B489847
Total Cobalt (Co)	mg/L	<0.00030	0.0035	0.00030	B489847
Total Copper (Cu)	mg/L	<0.0010	0.0076	0.0010	B489847
Total Iron (Fe)	mg/L	<0.060	7.4	0.060	B489849
Total Lead (Pb)	mg/L	<0.00020	0.0041	0.00020	B489847
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B489849
Total Magnesium (Mg)	mg/L	34	21	0.20	B489849
Total Manganese (Mn)	mg/L	0.0053	0.18	0.0040	B489849
Total Molybdenum (Mo)	mg/L	0.0020	0.0017	0.00020	B489847
Total Nickel (Ni)	mg/L	<0.00050	0.011	0.00050	B489847
Total Phosphorus (P)	mg/L	<0.10	0.20	0.10	B489849
Total Potassium (K)	mg/L	1.3	2.0	0.30	B489849
Total Selenium (Se)	mg/L	<0.00020	0.00044	0.00020	B489847
Total Silicon (Si)	mg/L	2.3	5.6	0.50	B489849
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B489847
Total Sodium (Na)	mg/L	33	14	0.50	B489849
Total Strontium (Sr)	mg/L	1.7	0.58	0.020	B489849
Total Sulphur (S)	mg/L	60	25	0.20	B489849
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B489847
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B489847
Total Titanium (Ti)	mg/L	<0.0010	0.035	0.0010	B489847
Total Uranium (U)	mg/L	0.0012	0.0012	0.00010	B489847
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ876	CTQ877		
Sampling Date		2024/08/16 13:31	2024/08/16 12:21		
COC Number		292212	292212		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	<0.0010	0.0092	0.0010	B489847
Total Zinc (Zn)	mg/L	<0.0030	0.089	0.0030	B489847
RDL = Reportable Detection Limit					

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ876			CTQ876			CTQ877		
Sampling Date		2024/08/16 13:31			2024/08/16 13:31			2024/08/16 12:21		
COC Number		292212			292212			292212		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	360	0.50	B485451				190	0.50	B485451
Ion Balance (% Difference)	%	0.24	N/A	B485457				1.3	N/A	B485457
Nitrate (N)	mg/L	0.051	0.010	B485463				0.056	0.010	B485463
Nitrate (NO3)	mg/L	0.23	0.044	B485460				0.25	0.044	B485460
Nitrite (NO2)	mg/L	<0.033	0.033	B485460				<0.033	0.033	B485460
Sulphide (as H2S)	mg/L	0.012	0.0020	B485444				0.018	0.0020	B485444
Demand Parameters										
Chemical Oxygen Demand	mg/L	11	10	B487785				37	10	B487785
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B485313				<0.000020	0.000020	B485313
Misc. Inorganics										
Conductivity	uS/cm	800	2.0	B486769				420	2.0	B486769
Dissolved Organic Carbon (C)	mg/L	2.4	0.50	B486452				2.8	0.50	B486452
pH	pH	8.36	N/A	B486759				8.14	N/A	B486759
Total Organic Carbon (C)	mg/L	2.3	0.50	B486502				3.1	0.50	B486502
Total Dissolved Solids	mg/L	500	10	B487415				250	10	B487415
Total Suspended Solids	mg/L	<1.0	1.0	B487438				450 (1)	1.3	B487438
Anions										
Alkalinity (PP as CaCO3)	mg/L	2.2	1.0	B486754				<1.0	1.0	B486754
Alkalinity (Total as CaCO3)	mg/L	190	1.0	B486754				120	1.0	B486754
Bicarbonate (HCO3)	mg/L	220	1.0	B486754				140	1.0	B486754
Carbonate (CO3)	mg/L	2.7	1.0	B486754				<1.0	1.0	B486754
Hydroxide (OH)	mg/L	<1.0	1.0	B486754				<1.0	1.0	B486754
Total Sulphide	mg/L	0.011	0.0018	B486259				0.017	0.0018	B486259
Chloride (Cl)	mg/L	38	1.0	B486504				16	1.0	B486504
Sulphate (SO4)	mg/L	180	5.0	B486504				73	1.0	B486504
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B486870				<0.015	0.015	B486864

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Detection limit raised based on sample volume used for analysis.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ876			CTQ876			CTQ877		
Sampling Date		2024/08/16 13:31			2024/08/16 13:31			2024/08/16 12:21		
COC Number		292212			292212			292212		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486380				<0.0030	0.0030	B486380
Nitrite (N)	mg/L	<0.010	0.010	B486588				<0.010	0.010	B486588
Nitrate plus Nitrite (N)	mg/L	0.051	0.010	B486588				0.056	0.010	B486588
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B485334				<2.0	2.0	B485334
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B485250				<2.0	2.0	B485250
Physical Properties										
True Colour	PtCo units	7.2	2.0	B486456				8.6	2.0	B486456
Physical Properties										
Turbidity	NTU	0.32	0.10	B485511	0.36	0.10	B485511	150	0.10	B485511

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ876	CTQ877			CTQ877		
Sampling Date		2024/08/16 13:31	2024/08/16 12:21			2024/08/16 12:21		
COC Number		292212	292212			292212		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B485187			
Acenaphthene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
Acridine	ug/L	<0.040	<0.040	0.040	B485499	<0.040	0.040	B485499
Anthracene	ug/L	<0.010	<0.010	0.010	B485499	<0.010	0.010	B485499
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B485499	<0.0075	0.0075	B485499
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B485499	<0.0075	0.0075	B485499
Fluoranthene	ug/L	<0.010	<0.010	0.010	B485499	<0.010	0.010	B485499
Fluorene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
Naphthalene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
Phenanthrene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
Perylene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
Pyrene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
Quinoline	ug/L	<0.20	<0.20	0.20	B485499	<0.20	0.20	B485499
Retene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
Biphenyl	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ876	CTQ877			CTQ877		
Sampling Date		2024/08/16 13:31	2024/08/16 12:21			2024/08/16 12:21		
COC Number		292212	292212			292212		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C1-fluorene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
C2-fluorene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
C3-fluorene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B485499	<0.050	0.050	B485499
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B485499	<0.020	0.020	B485499
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B485499	<0.0085	0.0085	B485499
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B485499	<0.0075	0.0075	B485499
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B485499	<0.0075	0.0075	B485499
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B485499	<0.10	0.10	B485499
Extraction Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	98	96		B485499	91		B485499
D8-ACENAPHTHYLENE (sur.)	%	83	81		B485499	77		B485499
D8-NAPHTHALENE (sur.)	%	95	91		B485499	87		B485499

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ876	CTQ877			CTQ877		
Sampling Date		2024/08/16 13:31	2024/08/16 12:21			2024/08/16 12:21		
COC Number		292212	292212			292212		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**	**AEMP-DUP1 Lab-Dup**	**RDL**	**QC Batch**
TERPHENYL-D14 (sur.)	%	90	91		B485499	84		B485499

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTQ876	CTQ877		
Sampling Date		2024/08/16 13:31	2024/08/16 12:21		
COC Number		292212	292212		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B486666
RDL = Reportable Detection Limit					

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ876		CTQ877		
Sampling Date		2024/08/16 13:31		2024/08/16 12:21		
COC Number		292212		292212		
	UNITS	**AEMP-DS-01**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Elements						
Dissolved Aluminum (Al)	mg/L	<0.0030	B488054	0.021	0.0030	B488054
Dissolved Antimony (Sb)	mg/L	<0.00060	B488054	<0.00060	0.00060	B488054
Dissolved Arsenic (As)	mg/L	0.00020	B488054	0.00043	0.00020	B488054
Dissolved Barium (Ba)	mg/L	0.085	B486815	0.064	0.010	B487770
Dissolved Beryllium (Be)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Boron (B)	mg/L	0.038	B486815	0.021	0.020	B487770
Dissolved Calcium (Ca)	mg/L	87	B486815	48	0.30	B487770
Dissolved Chromium (Cr)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Cobalt (Co)	mg/L	<0.00030	B488054	<0.00030	0.00030	B488054
Dissolved Copper (Cu)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Iron (Fe)	mg/L	<0.060	B486815	<0.060	0.060	B487770
Dissolved Lead (Pb)	mg/L	<0.00020	B488054	<0.00020	0.00020	B488054
Dissolved Lithium (Li)	mg/L	0.027	B486815	<0.020	0.020	B487770
Dissolved Magnesium (Mg)	mg/L	34	B486815	16	0.20	B487770
Dissolved Manganese (Mn)	mg/L	0.0072	B486815	0.039	0.0040	B487770
Dissolved Molybdenum (Mo)	mg/L	0.0018	B488054	0.0012	0.00020	B488054
Dissolved Nickel (Ni)	mg/L	0.00059	B488054	0.00090	0.00050	B488054
Dissolved Phosphorus (P)	mg/L	<0.10	B486815	<0.10	0.10	B487770
Dissolved Potassium (K)	mg/L	1.3	B486815	1.0	0.30	B487770
Dissolved Selenium (Se)	mg/L	<0.00020	B488054	0.00032	0.00020	B488054
Dissolved Silicon (Si)	mg/L	2.2	B486815	1.7	0.50	B487770
Dissolved Silver (Ag)	mg/L	<0.00010	B488054	<0.00010	0.00010	B488054
Dissolved Sodium (Na)	mg/L	34	B486815	15	0.50	B487770
Dissolved Strontium (Sr)	mg/L	1.6	B486815	0.60	0.020	B487770
Dissolved Sulphur (S)	mg/L	61	B486815	28	0.20	B487770
Dissolved Thallium (Tl)	mg/L	<0.00020	B488054	<0.00020	0.00020	B488054
Dissolved Tin (Sn)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Titanium (Ti)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Uranium (U)	mg/L	0.0012	B488054	0.00085	0.00010	B488054
Dissolved Vanadium (V)	mg/L	<0.0010	B488054	<0.0010	0.0010	B488054
Dissolved Zinc (Zn)	mg/L	<0.0030	B488054	<0.0030	0.0030	B488054
RDL = Reportable Detection Limit						

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ876
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B486488	N/A	2024/08/23	Darrus Ong
F1-BTEX	CALC/MS	B485425	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B485313	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B485501	2024/08/23	2024/08/23	Vian Pereira
Sulphide (as H2S)	CALC	B485444	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B485451	N/A	2024/08/21	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B486815	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/23	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B485457	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486870	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B485460	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B485463	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B485499	2024/08/23	2024/08/23	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B485187	N/A	2024/08/26	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B487415	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B485465	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487438	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ876 Dup
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrogen (Total)	AC/COL	B487800	2024/08/22	2024/08/22	Yan Lin

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ876 Dup
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ877
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486754	N/A	2024/08/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B486488	N/A	2024/08/23	Darrus Ong
F1-BTEX	CALC/MS	B485425	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B485313	N/A	2024/08/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B486504	N/A	2024/08/21	Tyler Orr
COD by Colorimeter	M/PROB	B487785	N/A	2024/08/22	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486769	N/A	2024/08/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B485501	2024/08/23	2024/08/23	Vian Pereira
Sulphide (as H2S)	CALC	B485444	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B485451	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487770	N/A	2024/08/22	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/23	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B488054	N/A	2024/08/22	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B485457	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486864	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B485460	N/A	2024/08/22	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486588	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B485463	2024/08/22	2024/08/22	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B485499	2024/08/23	2024/08/23	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B485187	N/A	2024/08/26	Automated Statchk
pH @25°C	AT/ALK	B486759	N/A	2024/08/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486380	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B487415	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B485468	N/A	2024/08/22	Automated Statchk
Nitrogen (Total)	AC/COL	B487833	2024/08/22	2024/08/22	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487438	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CTQ877 Dup
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B485501	2024/08/23	2024/08/23	Vian Pereira
Target & Alkylated PAH in Water by GC/MS	GC/MS	B485499	2024/08/23	2024/08/23	Shuang (Jessica) Chen

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GENERAL COMMENTS

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

Package 1	6.3°C

Sample CTQ876 [AEMP-DS-01] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CTQ877 [AEMP-DUP1] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

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Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B485250	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/26	<2.0		mg/L	
B485334	RRA	Method Blank	Oil and grease	2024/08/26	<2.0		mg/L	
B485499	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/23		104	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/23		96	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/23		88	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/23		100	%	50 - 130
			Acenaphthene	2024/08/23	<0.10		ug/L	
			Acenaphthylene	2024/08/23	<0.10		ug/L	
			Acridine	2024/08/23	<0.040		ug/L	
			Anthracene	2024/08/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/23	<0.050		ug/L	
			Chrysene	2024/08/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/23	<0.0075		ug/L	
			Fluoranthene	2024/08/23	<0.010		ug/L	
			Fluorene	2024/08/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/23	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/23	<0.10		ug/L	
			Naphthalene	2024/08/23	<0.10		ug/L	
			Phenanthrene	2024/08/23	<0.050		ug/L	
			Perylene	2024/08/23	<0.050		ug/L	
			Pyrene	2024/08/23	<0.020		ug/L	
			Quinoline	2024/08/23	<0.20		ug/L	
			Retene	2024/08/23	<0.050		ug/L	
			C1-Naphthalene	2024/08/23	<0.10		ug/L	
			C3-Naphthalene	2024/08/23	<0.10		ug/L	
			C4-Naphthalene	2024/08/23	<0.10		ug/L	
			C2-Naphthalene	2024/08/23	<0.10		ug/L	
			Biphenyl	2024/08/23	<0.020		ug/L	
			C1-biphenyl	2024/08/23	<0.020		ug/L	
			C2-biphenyl	2024/08/23	<0.020		ug/L	
			C1-fluorene	2024/08/23	<0.050		ug/L	
			C2-fluorene	2024/08/23	<0.050		ug/L	
			C3-fluorene	2024/08/23	<0.050		ug/L	
			Dibenzothiophene	2024/08/23	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C4 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/23	<0.10		ug/L	
B485501	VP4	Method Blank	O-TERPHENYL (sur.)	2024/08/23		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/23	<0.10		mg/L	
B485511	AP1	Method Blank	Turbidity	2024/08/20	<0.10		NTU	
B486259	LYV	Method Blank	Total Sulphide	2024/08/21	<0.0018		mg/L	
B486380	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486452	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486456	MOP	Method Blank	True Colour	2024/08/21	<2.0		PtCo units	
B486488	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/23		102	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/23		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/23		104	%	50 - 140
			Benzene	2024/08/23	<0.00040		mg/L	
			Toluene	2024/08/23	<0.00040		mg/L	
			Ethylbenzene	2024/08/23	<0.00040		mg/L	
			m & p-Xylene	2024/08/23	<0.00080		mg/L	
			o-Xylene	2024/08/23	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/23	<0.10		mg/L	
B486502	JYU	Method Blank	Total Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486504	TOR	Method Blank	Chloride (Cl)	2024/08/21	<1.0		mg/L	
			Sulphate (SO4)	2024/08/21	<1.0		mg/L	
B486588	AFI	Method Blank	Nitrite (N)	2024/08/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/21	<0.010		mg/L	
B486666	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486754	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/23	<1.0		mg/L	
			Carbonate (CO3)	2024/08/23	<1.0		mg/L	
			Hydroxide (OH)	2024/08/23	<1.0		mg/L	
B486769	AYE	Method Blank	Conductivity	2024/08/23	<2.0		uS/cm	
B486815	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	
B486864	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B486870	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B487142	KHU	Method Blank	Total Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B487415	TNY	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B487438	TNY	Method Blank	Total Suspended Solids	2024/08/23	<0.99		mg/L	
B487770	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/22	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/22	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/22	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/22	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/22	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/22	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/22	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/22	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/22	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/22	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/22	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/22	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/22	<0.30		mg/L	
B487785	AP1	Method Blank	Chemical Oxygen Demand	2024/08/22	<10		mg/L	
B487800	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B487833	YL7	Method Blank	Total Nitrogen (N)	2024/08/22	<0.020		mg/L	
B488054	KH2	Method Blank	Dissolved Aluminum (Al)	2024/08/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/22	<0.0010		mg/L	
B489847	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B489849	JAB	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B485511	AP1	RPD [CTQ876-01]	Turbidity	2024/08/20	13		%	20
B487800	YL7	RPD [CTQ876-05]	Total Nitrogen (N)	2024/08/22	4.5		%	20
B485499	JC7	RPD [CTQ877-13]	Acenaphthene	2024/08/23	NC		%	30
			Acenaphthylene	2024/08/23	NC		%	30
			Acridine	2024/08/23	NC		%	30
			Anthracene	2024/08/23	NC		%	30
			Benzo(a)anthracene	2024/08/23	NC		%	30
			Benzo(b&j)fluoranthene	2024/08/23	NC		%	30
			Benzo(k)fluoranthene	2024/08/23	NC		%	30
			Benzo(g,h,i)perylene	2024/08/23	NC		%	30
			Benzo(c)phenanthrene	2024/08/23	NC		%	30
			Benzo(a)pyrene	2024/08/23	NC		%	30
			Benzo(e)pyrene	2024/08/23	NC		%	30
			Chrysene	2024/08/23	NC		%	30
			Dibenz(a,h)anthracene	2024/08/23	NC		%	30
			Fluoranthene	2024/08/23	NC		%	30
			Fluorene	2024/08/23	NC		%	30
			Indeno(1,2,3-cd)pyrene	2024/08/23	NC		%	30
			Indeno(1,2,3-cd)fluoranthene	2024/08/23	NC		%	30
			2-Methylnaphthalene	2024/08/23	NC		%	30
			Naphthalene	2024/08/23	NC		%	30
			Phenanthrene	2024/08/23	NC		%	30
			Perylene	2024/08/23	NC		%	30
			Pyrene	2024/08/23	NC		%	30
			Quinoline	2024/08/23	NC		%	30
			Retene	2024/08/23	NC		%	30
			C1-Naphthalene	2024/08/23	NC		%	30
			C3-Naphthalene	2024/08/23	NC		%	30
			C4-Naphthalene	2024/08/23	NC		%	30
			C2-Naphthalene	2024/08/23	NC		%	30
			Biphenyl	2024/08/23	NC		%	30
			C1-biphenyl	2024/08/23	NC		%	30
			C2-biphenyl	2024/08/23	NC		%	30
			C1-fluorene	2024/08/23	NC		%	30
			C2-fluorene	2024/08/23	NC		%	30
			C3-fluorene	2024/08/23	NC		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dibenzothiophene	2024/08/23	NC		%	30
			C1-dibenzothiophene	2024/08/23	NC		%	30
			C2-dibenzothiophene	2024/08/23	NC		%	30
			C3-dibenzothiophene	2024/08/23	NC		%	30
			C4-dibenzothiophene	2024/08/23	NC		%	30
			C1 phenanthrene/anthracene	2024/08/23	NC		%	30
			C2 phenanthrene/anthracene	2024/08/23	NC		%	30
			C3 phenanthrene/anthracene	2024/08/23	NC		%	30
			C4 phenanthrene/anthracene	2024/08/23	NC		%	30
			C1 fluoranthene/pyrene	2024/08/23	NC		%	30
			C2 fluoranthene/pyrene	2024/08/23	NC		%	30
			C3 fluoranthene/pyrene	2024/08/23	NC		%	30
			C4 fluoranthene/pyrene	2024/08/23	NC		%	30
			C1 benzo(a)anthracene/chrysene	2024/08/23	NC		%	30
			C2 benzo(a)anthracene/chrysene	2024/08/23	NC		%	30
			C3 benzo(a)anthracene/chrysene	2024/08/23	NC		%	30
			C4 benzo(a)anthracene/chrysene	2024/08/23	NC		%	30
			C1benzobjkfluoranthene/benzoapyrene	2024/08/23	NC		%	30
			C2benzobjkfluoranthene/benzoapyrene	2024/08/23	NC		%	30
			C1-Acenaphthene	2024/08/23	NC		%	30
			1-Methylnaphthalene	2024/08/23	NC		%	30
B485501	VP4	RPD [CTQ877-12]	F2 (C10-C16 Hydrocarbons)	2024/08/23	NC		%	30
B487142	KHU	Matrix Spike [CTQ876-08]	Total Mercury (Hg)	2024/08/22		91	%	80 - 120
B487800	YL7	Matrix Spike [CTQ876-05]	Total Nitrogen (N)	2024/08/22		105	%	80 - 120
B485250	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/26		94	%	70 - 130
B485334	RRA	LCS	Oil and grease	2024/08/26		92	%	70 - 130
B485499	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/23		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/23		101	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/23		101	%	50 - 130
			Acenaphthene	2024/08/23		96	%	50 - 130
			Acenaphthylene	2024/08/23		94	%	50 - 130
			Acridine	2024/08/23		94	%	50 - 130
			Anthracene	2024/08/23		92	%	50 - 130
			Benzo(a)anthracene	2024/08/23		91	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/23		92	%	50 - 130
			Benzo(k)fluoranthene	2024/08/23		115	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/08/23		93	%	50 - 130
			Benzo(a)pyrene	2024/08/23		92	%	50 - 130
			Benzo(e)pyrene	2024/08/23		84	%	50 - 130
			Chrysene	2024/08/23		101	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/23		91	%	50 - 130
			Fluoranthene	2024/08/23		96	%	50 - 130
			Fluorene	2024/08/23		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/23		85	%	50 - 130
			2-Methylnaphthalene	2024/08/23		95	%	50 - 130
			Naphthalene	2024/08/23		96	%	50 - 130
			Phenanthrene	2024/08/23		97	%	50 - 130
			Perylene	2024/08/23		89	%	50 - 130
			Pyrene	2024/08/23		97	%	50 - 130
			Quinoline	2024/08/23		109	%	50 - 130

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C1-Naphthalene	2024/08/23		83	%	50 - 130
			C3-Naphthalene	2024/08/23		93	%	50 - 130
			C2-Naphthalene	2024/08/23		96	%	50 - 130
			C1-biphenyl	2024/08/23		93	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/23		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/23		93	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/23		92	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/23		94	%	30 - 130
			1-Methylnaphthalene	2024/08/23		83	%	50 - 130
B485501	VP4	LCS	O-TERPHENYL (sur.)	2024/08/24		94	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/24		88	%	60 - 140
B485511	AP1	LCS	Turbidity	2024/08/20		100	%	80 - 120
B486259	LYV	LCS	Total Sulphide	2024/08/21		105	%	80 - 120
B486380	MAP	LCS	Orthophosphate (P)	2024/08/21		100	%	80 - 120
B486452	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/21		101	%	80 - 120
B486456	MOP	LCS	True Colour	2024/08/21		94	%	80 - 120
B486488	DO1	LCS	1,4-Difluorobenzene (sur.)	2024/08/23		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/23		97	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/23		104	%	50 - 140
			Benzene	2024/08/23		91	%	60 - 130
			Toluene	2024/08/23		89	%	60 - 130
			Ethylbenzene	2024/08/23		93	%	60 - 130
			m & p-Xylene	2024/08/23		92	%	60 - 130
			o-Xylene	2024/08/23		92	%	60 - 130
			F1 (C6-C10)	2024/08/23		95	%	60 - 140
B486502	JYU	LCS	Total Organic Carbon (C)	2024/08/21		99	%	80 - 120
B486504	TOR	LCS	Chloride (Cl)	2024/08/21		101	%	80 - 120
			Sulphate (SO4)	2024/08/21		100	%	80 - 120
B486588	AFI	LCS	Nitrite (N)	2024/08/21		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		102	%	80 - 120
B486666	KHU	LCS	Dissolved Mercury (Hg)	2024/08/22		96	%	80 - 120
B486754	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/23		102	%	80 - 120
B486759	AYE	LCS	pH	2024/08/23		100	%	97 - 103
B486769	AYE	LCS	Conductivity	2024/08/23		96	%	90 - 110
B486815	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		99	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		92	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		98	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		95	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		96	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		95	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		94	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		97	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		98	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		91	%	80 - 120
			Dissolved Boron (B)	2024/08/21		94	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		96	%	80 - 120
B486864	AFI	LCS	Total Ammonia (N)	2024/08/21		102	%	80 - 120
B486870	AFI	LCS	Total Ammonia (N)	2024/08/21		101	%	80 - 120
B487142	KHU	LCS	Total Mercury (Hg)	2024/08/22		92	%	80 - 120
B487415	TNY	LCS	Total Dissolved Solids	2024/08/23		99	%	80 - 120
B487438	TNY	LCS	Total Suspended Solids	2024/08/23		92	%	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
B487770	VSC	LCS	Dissolved Iron (Fe)	2024/08/22		100	%	80 - 120
			Dissolved Lithium (Li)	2024/08/22		96	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/22		96	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/22		98	%	80 - 120
			Dissolved Potassium (K)	2024/08/22		96	%	80 - 120
			Dissolved Sodium (Na)	2024/08/22		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/22		95	%	80 - 120
			Dissolved Sulphur (S)	2024/08/22		96	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/22		101	%	80 - 120
			Dissolved Barium (Ba)	2024/08/22		99	%	80 - 120
			Dissolved Silicon (Si)	2024/08/22		96	%	80 - 120
			Dissolved Boron (B)	2024/08/22		99	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/22		97	%	80 - 120
B487785	AP1	LCS	Chemical Oxygen Demand	2024/08/22		100	%	80 - 120
B487800	YL7	LCS	Total Nitrogen (N)	2024/08/22		107	%	80 - 120
B487833	YL7	LCS	Total Nitrogen (N)	2024/08/22		105	%	80 - 120
B488054	KH2	LCS	Dissolved Aluminum (Al)	2024/08/23		109	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/23		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/23		103	%	80 - 120
			Dissolved Copper (Cu)	2024/08/23		105	%	80 - 120
			Dissolved Lead (Pb)	2024/08/23		101	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/23		108	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/08/23		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/23		102	%	80 - 120
			Dissolved Selenium (Se)	2024/08/23		110	%	80 - 120
			Dissolved Silver (Ag)	2024/08/23		102	%	80 - 120
			Dissolved Arsenic (As)	2024/08/23		108	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/23		99	%	80 - 120
			Dissolved Tin (Sn)	2024/08/23		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/23		101	%	80 - 120
			Dissolved Uranium (U)	2024/08/23		103	%	80 - 120
			Dissolved Vanadium (V)	2024/08/23		105	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/23		109	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/23		99	%	80 - 120
B489847	JAB	LCS	Total Aluminum (Al)	2024/08/24		117	%	80 - 120
			Total Chromium (Cr)	2024/08/24		96	%	80 - 120
			Total Cobalt (Co)	2024/08/24		98	%	80 - 120
			Total Copper (Cu)	2024/08/24		95	%	80 - 120
			Total Lead (Pb)	2024/08/24		102	%	80 - 120
			Total Antimony (Sb)	2024/08/24		99	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		101	%	80 - 120
			Total Nickel (Ni)	2024/08/24		96	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		99	%	80 - 120
			Total Arsenic (As)	2024/08/24		91	%	80 - 120
			Total Thallium (Tl)	2024/08/24		105	%	80 - 120
			Total Tin (Sn)	2024/08/24		105	%	80 - 120
			Total Titanium (Ti)	2024/08/24		95	%	80 - 120
			Total Uranium (U)	2024/08/24		103	%	80 - 120
			Total Vanadium (V)	2024/08/24		98	%	80 - 120
			Total Zinc (Zn)	2024/08/24		87	%	80 - 120
			Total Beryllium (Be)	2024/08/24		101	%	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
B489849	JAB	LCS	Total Iron (Fe)	2024/08/23		101	%	80 - 120
			Total Lithium (Li)	2024/08/23		95	%	80 - 120
			Total Magnesium (Mg)	2024/08/23		104	%	80 - 120
			Total Manganese (Mn)	2024/08/23		101	%	80 - 120
			Total Potassium (K)	2024/08/23		96	%	80 - 120
			Total Sodium (Na)	2024/08/23		95	%	80 - 120
			Total Strontium (Sr)	2024/08/23		97	%	80 - 120
			Total Sulphur (S)	2024/08/23		100	%	80 - 120
			Total Phosphorus (P)	2024/08/23		100	%	80 - 120
			Total Barium (Ba)	2024/08/23		100	%	80 - 120
			Total Silicon (Si)	2024/08/23		99	%	80 - 120
			Total Boron (B)	2024/08/23		93	%	80 - 120
			Total Calcium (Ca)	2024/08/23		97	%	80 - 120
B487800	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120
B487833	YL7	SRM	Total Nitrogen (N)	2024/08/22		108	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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 Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464059
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS. NT
Project #: 417085-54419-24200

VALIDATION SIGNATURE PAGE

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

Elizabeth Chacko, Senior Analyst, Organics

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

Qiliang (Alex) Wu, Senior Analyst

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

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

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Logiciel Propriétaire de Bureau Veritas

Automated Statchk

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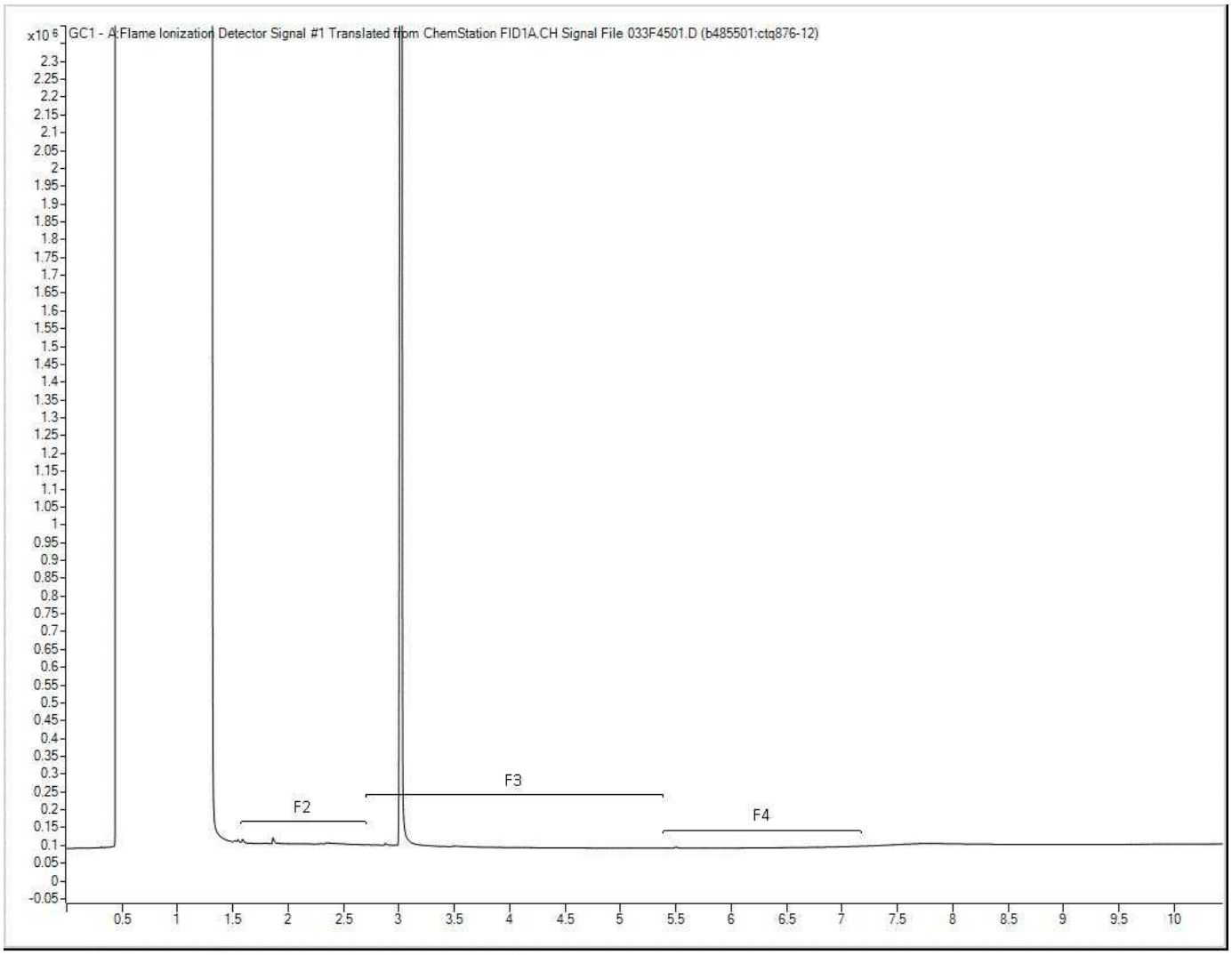
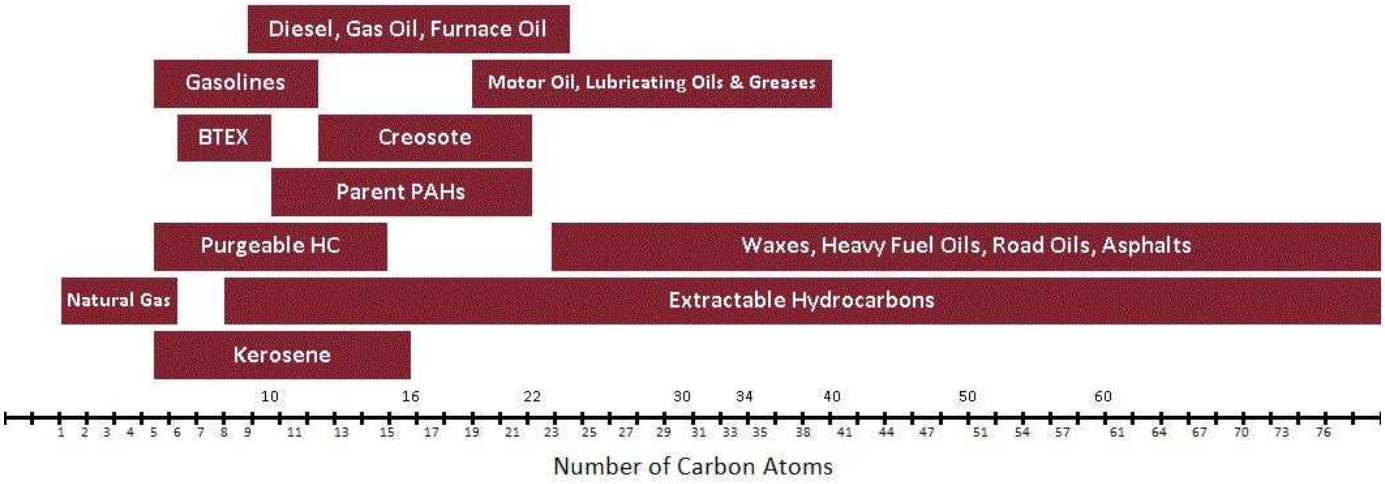
Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464059
Report Date: 2024/08/27
Bureau Veritas Sample: CTQ876

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS. NT
Client ID: AEMP-DS-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





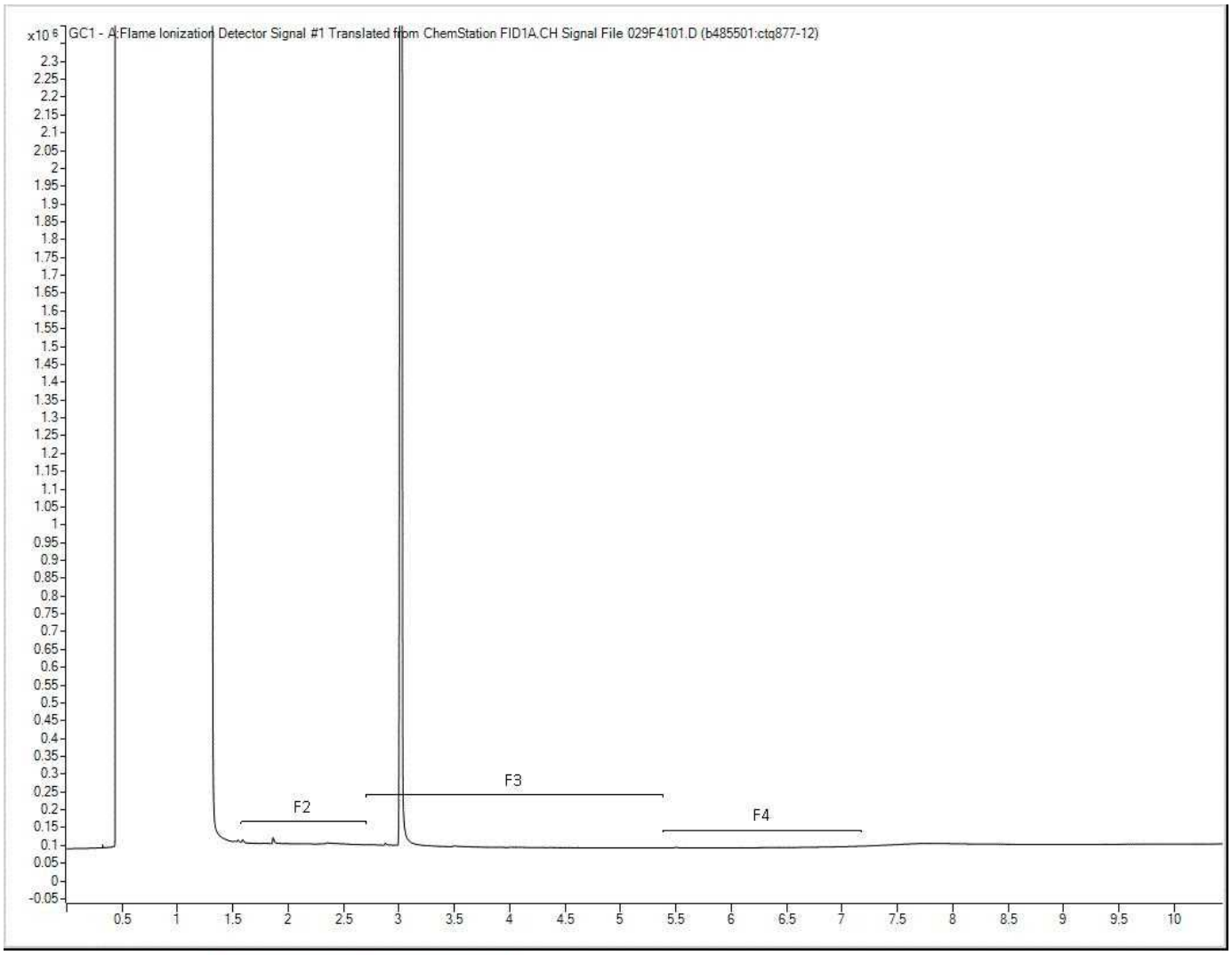
hpchem13\HPchem\1\DATA\2024\08\RUN0823

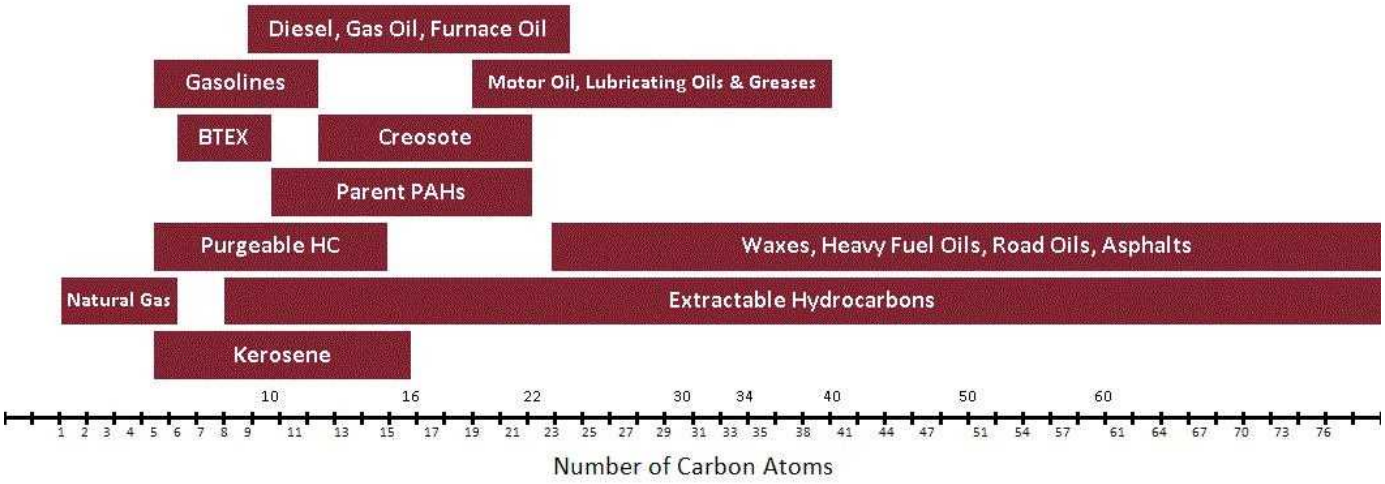
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C464059
Report Date: 2024/08/27
Bureau Veritas Sample: CTQ877

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS. NT
Client ID: AEMP-DUP1

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





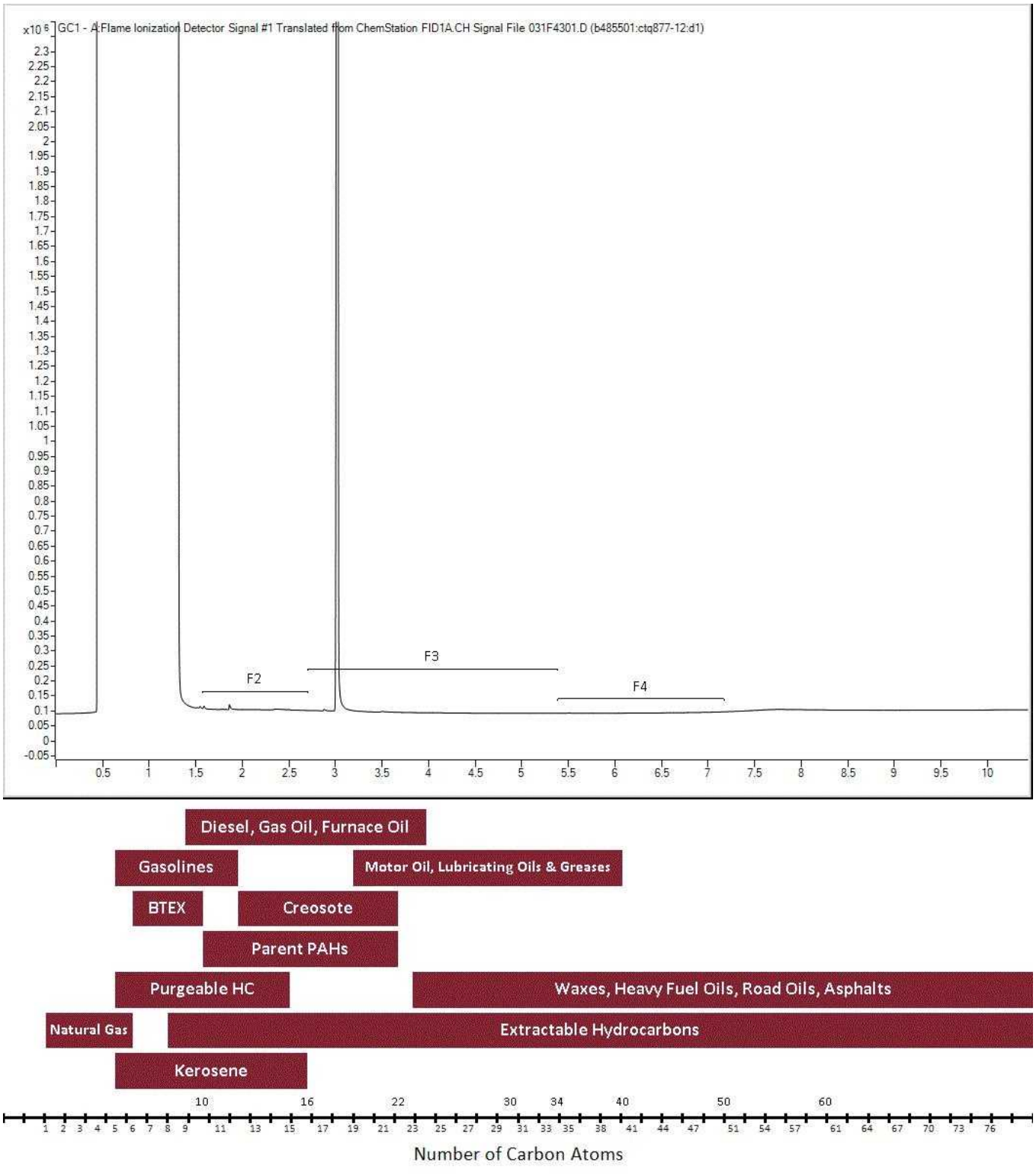
hpchem13\HPchem\1\DATA\2024\08\RUN0823

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

Bureau Veritas Job #: C464059
Report Date: 2024/08/27
Bureau Veritas Sample: CTQ877 Lab-Dup

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS. NT
Client ID: AEMP-DUP1

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

Maxxam
A Bureau Veritas Group Company

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Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292212

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 897 6249	Ph: 587 897 6249
Sampler Name (Print): Stacy Gibb / Nav Hari	Consultant Project #: 417085 - 54419 - 24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	ANALYSIS REQUESTED: VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	Oil & Grease	TOC, Doc, Sulphide	Nitrate, Nitrite, Ammonia (Total) TKN	Orthophosphate	Sulphur - Total & dissolved (SO)	Alkylated PAH TAT
1	AEMP-DS-01		X			18	2024/08/16	13:31	X			X	X								X	X				X			X	X	X	X	X	X	X
2	AEMP-Dup1		X			18	2024/08/16	12:21	X			X	X								X	X				X			X	X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

med2-2024-08-502

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): NA

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085 - 54419 - 24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canyda.chemistry@worley.com cafal_lor_datatrack@worley.com stacy.gibb@worley.com IES AZ601436

JARS USED & NOT SUBMITTED (Enter N/A for Water): NA

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓		TEMP °C	7 (1)	7 (2)	5 (3)

	YES	NO	COOLER ID # mccal			
SEAL PRESENT	✓					
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓		TEMP °C	4.1 (1)	4.1 (2)	3.2 (3)

	YES	NO	COOLER ID #			
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT			TEMP °C	(1)	(2)	(3)

LAB USE ONLY
MAXXAM JOB # C4640459

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	stacy gibb	2024/08/18	10:10	1.	BRENTON MAH	2024/08/19	12:54
2.	BRENTON MAH	2024/08/19	18:00	2.	ATRAVERSE	2024/08/20	07:00
3.				3.			

SAMPLES
LABELED BY: AHO
VERIFIED BY: EPL

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292213

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547329
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464061
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292213

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547329
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464061
Received: 2024/08/19, 12:54

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292213

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/08/27
Report #: R3547329
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C464061

Received: 2024/08/19, 12:54

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
28 Aug 2024 08:08:51

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CTQ878		CTQ879		
Sampling Date		2024/08/16 12:21		2024/08/15 15:45		
COC Number		292213		292213		
	UNITS	**AEMP-DS-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	B482212	<0.10	0.10	B485501
Volatiles						
Benzene	mg/L	<0.00040	B485491	<0.00040	0.00040	B485491
Toluene	mg/L	<0.00040	B485491	<0.00040	0.00040	B485491
Ethylbenzene	mg/L	<0.00040	B485491	<0.00040	0.00040	B485491
m & p-Xylene	mg/L	<0.00080	B485491	<0.00080	0.00080	B485491
o-Xylene	mg/L	<0.00040	B485491	<0.00040	0.00040	B485491
Xylenes (Total)	mg/L	<0.00089	B485105	<0.00089	0.00089	B485105
F1 (C6-C10) - BTEX	mg/L	<0.10	B485105	<0.10	0.10	B485105
F1 (C6-C10)	mg/L	<0.10	B485491	<0.10	0.10	B485491
Extraction Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	86	B482212	93		B485501
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	100	B485491	101		B485491
4-Bromofluorobenzene (sur.)	%	113	B485491	110		B485491
D4-1,2-Dichloroethane (sur.)	%	89	B485491	91		B485491

RDL = Reportable Detection Limit

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Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CTQ878		CTQ879		
Sampling Date		2024/08/16 12:21		2024/08/15 15:45		
COC Number		292213		292213		
	UNITS	**AEMP-DS-02**	**RDL**	**AEMP-US-01**	**RDL**	**QC Batch**
Calculated Parameters						
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.23	0.20	0.14	0.020	B484639
Nutrients						
Total Nitrogen (N)	mg/L	0.28 (1)	0.20	0.20	0.020	B485884

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Bureau Veritas Job #: C464061
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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ878	CTQ879		
Sampling Date		2024/08/16 12:21	2024/08/15 15:45		
COC Number		292213	292213		
	UNITS	**AEMP-DS-02**	**AEMP-US-01**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	0.00022	0.000021	0.000020	B484349
Total Mercury (Hg)	ug/L	0.013	<0.0019	0.0019	B487142
Total Aluminum (Al)	mg/L	3.4	0.30	0.0030	B489847
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B489847
Total Arsenic (As)	mg/L	0.0031	0.00044	0.00020	B489847
Total Barium (Ba)	mg/L	0.17	0.051	0.010	B489849
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B489847
Total Boron (B)	mg/L	0.025	<0.020	0.020	B489849
Total Calcium (Ca)	mg/L	61	30	0.30	B489849
Total Chromium (Cr)	mg/L	0.0049	<0.0010	0.0010	B489847
Total Cobalt (Co)	mg/L	0.0035	<0.00030	0.00030	B489847
Total Copper (Cu)	mg/L	0.0074	0.0011	0.0010	B489847
Total Iron (Fe)	mg/L	7.7	0.45	0.060	B489849
Total Lead (Pb)	mg/L	0.0043	0.00025	0.00020	B489847
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B489849
Total Magnesium (Mg)	mg/L	21	10	0.20	B489849
Total Manganese (Mn)	mg/L	0.18	0.013	0.0040	B489849
Total Molybdenum (Mo)	mg/L	0.0017	0.00088	0.00020	B489847
Total Nickel (Ni)	mg/L	0.011	0.0013	0.00050	B489847
Total Phosphorus (P)	mg/L	0.20	<0.10	0.10	B489849
Total Potassium (K)	mg/L	1.9	1.0	0.30	B489849
Total Selenium (Se)	mg/L	0.00047	0.00028	0.00020	B489847
Total Silicon (Si)	mg/L	5.7	2.2	0.50	B489849
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B489847
Total Sodium (Na)	mg/L	14	8.7	0.50	B489849
Total Strontium (Sr)	mg/L	0.61	0.21	0.020	B489849
Total Sulphur (S)	mg/L	26	12	0.20	B489849
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B489847
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B489847
Total Titanium (Ti)	mg/L	0.036	0.012	0.0010	B489847
Total Uranium (U)	mg/L	0.0012	0.00066	0.00010	B489847
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

REGULATED METALS INCLUDING MERCURY-TOTAL (WATER)

Bureau Veritas ID		CTQ878	CTQ879		
Sampling Date		2024/08/16 12:21	2024/08/15 15:45		
COC Number		292213	292213		
	UNITS	**AEMP-DS-02**	**AEMP-US-01**	**RDL**	**QC Batch**
Total Vanadium (V)	mg/L	0.0088	0.0010	0.0010	B489847
Total Zinc (Zn)	mg/L	0.058	<0.0030	0.0030	B489847
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ878			CTQ879		
Sampling Date		2024/08/16 12:21			2024/08/15 15:45		
COC Number		292213			292213		
	UNITS	**AEMP-DS-02**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L	190	0.50	B485028	110	0.50	B485028
Ion Balance (% Difference)	%	1.6	N/A	B484977	2.9	N/A	B484977
Nitrate (N)	mg/L	0.043	0.010	B485183	0.065	0.010	B485183
Nitrate (NO3)	mg/L	0.19	0.044	B485182	0.29	0.044	B485182
Nitrite (NO2)	mg/L	<0.033	0.033	B485182	<0.033	0.033	B485182
Sulphide (as H2S)	mg/L	0.020	0.0020	B484351	<0.0020	0.0020	B484351
Demand Parameters							
Chemical Oxygen Demand	mg/L	31	10	B486261	11	10	B486261
Elements							
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B484348	<0.000020	0.000020	B484348
Misc. Inorganics							
Conductivity	uS/cm	400	2.0	B486802	270	2.0	B486802
Dissolved Organic Carbon (C)	mg/L	3.0	0.50	B486452	2.9	0.50	B486452
pH	pH	7.92	N/A	B486801	7.83	N/A	B486801
Total Organic Carbon (C)	mg/L	2.7	0.50	B486502	2.7	0.50	B486502
Total Dissolved Solids	mg/L	240	10	B487415	160	10	B485896
Total Suspended Solids	mg/L	460 (1)	1.5	B487438	8.0	1.0	B487431
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B486794	<1.0	1.0	B486794
Alkalinity (Total as CaCO3)	mg/L	120	1.0	B486794	89	1.0	B486794
Bicarbonate (HCO3)	mg/L	150	1.0	B486794	110	1.0	B486794
Carbonate (CO3)	mg/L	<1.0	1.0	B486794	<1.0	1.0	B486794
Hydroxide (OH)	mg/L	<1.0	1.0	B486794	<1.0	1.0	B486794
Total Sulphide	mg/L	0.019	0.0018	B486259	<0.0018	0.0018	B486259
Chloride (Cl)	mg/L	15	1.0	B485359	11	1.0	B485359
Sulphate (SO4)	mg/L	73	1.0	B485359	39	1.0	B485359
Nutrients							
Total Ammonia (N)	mg/L	0.016	0.015	B486870	<0.015	0.015	B486870
Orthophosphate (P)	mg/L	<0.0030	0.0030	B486383	<0.0030	0.0030	B486383

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Detection limit raised based on sample volume used for analysis.

Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CTQ878			CTQ879		
Sampling Date		2024/08/16 12:21			2024/08/15 15:45		
COC Number		292213			292213		
	UNITS	**AEMP-DS-02**	**RDL**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B486591	<0.010	0.010	B486591
Nitrate plus Nitrite (N)	mg/L	0.043	0.010	B486591	0.065	0.010	B486591
Misc. Organics							
Oil and grease	mg/L	<2.0	2.0	B485334	<2.0	2.0	B485334
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B485250	<2.0	2.0	B485250
Physical Properties							
True Colour	PtCo units	6.4	2.0	B486456	5.0	2.0	B486456
Physical Properties							
Turbidity	NTU	150	0.10	B485511	8.8	0.10	B485511
RDL = Reportable Detection Limit							

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ878		CTQ879		
Sampling Date		2024/08/16 12:21		2024/08/15 15:45		
COC Number		292213		292213		
	UNITS	**AEMP-DS-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	B484359	<0.000010	0.000010	B484359
Acenaphthene	ug/L	<0.10	B481343	<0.10	0.10	B485499
Acenaphthylene	ug/L	<0.10	B481343	<0.10	0.10	B485499
Acridine	ug/L	<0.040	B481343	<0.040	0.040	B485499
Anthracene	ug/L	<0.010	B481343	<0.010	0.010	B485499
Benzo(a)anthracene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
Benzo(b&j)fluoranthene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
Benzo(k)fluoranthene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
Benzo(g,h,i)perylene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
Benzo(c)phenanthrene	ug/L	<0.050	B481343	<0.050	0.050	B485499
Benzo(a)pyrene	ug/L	<0.0075	B481343	<0.0075	0.0075	B485499
Benzo(e)pyrene	ug/L	<0.050	B481343	<0.050	0.050	B485499
Chrysene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
Dibenz(a,h)anthracene	ug/L	<0.0075	B481343	<0.0075	0.0075	B485499
Fluoranthene	ug/L	<0.010	B481343	<0.010	0.010	B485499
Fluorene	ug/L	<0.050	B481343	<0.050	0.050	B485499
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
2-Methylnaphthalene	ug/L	<0.10	B481343	<0.10	0.10	B485499
Naphthalene	ug/L	<0.10	B481343	<0.10	0.10	B485499
Phenanthrene	ug/L	<0.050	B481343	<0.050	0.050	B485499
Perylene	ug/L	<0.050	B481343	<0.050	0.050	B485499
Pyrene	ug/L	<0.020	B481343	<0.020	0.020	B485499
Quinoline	ug/L	<0.20	B481343	<0.20	0.20	B485499
Retene	ug/L	<0.050	B481343	<0.050	0.050	B485499
C1-Naphthalene	ug/L	<0.10	B481343	<0.10	0.10	B485499
C3-Naphthalene	ug/L	<0.10	B481343	<0.10	0.10	B485499
C4-Naphthalene	ug/L	<0.10	B481343	<0.10	0.10	B485499
C2-Naphthalene	ug/L	<0.10	B481343	<0.10	0.10	B485499
Biphenyl	ug/L	<0.020	B481343	<0.020	0.020	B485499
C1-biphenyl	ug/L	<0.020	B481343	<0.020	0.020	B485499
RDL = Reportable Detection Limit						

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CTQ878		CTQ879		
Sampling Date		2024/08/16 12:21		2024/08/15 15:45		
COC Number		292213		292213		
	UNITS	**AEMP-DS-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	B481343	<0.020	0.020	B485499
C1-fluorene	ug/L	<0.050	B481343	<0.050	0.050	B485499
C2-fluorene	ug/L	<0.050	B481343	<0.050	0.050	B485499
C3-fluorene	ug/L	<0.050	B481343	<0.050	0.050	B485499
Dibenzothiophene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C1-dibenzothiophene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C2-dibenzothiophene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C3-dibenzothiophene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C4-dibenzothiophene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C1 phenanthrene/anthracene	ug/L	<0.050	B481343	<0.050	0.050	B485499
C2 phenanthrene/anthracene	ug/L	<0.050	B481343	<0.050	0.050	B485499
C3 phenanthrene/anthracene	ug/L	<0.050	B481343	<0.050	0.050	B485499
C4 phenanthrene/anthracene	ug/L	<0.050	B481343	<0.050	0.050	B485499
C1 fluoranthene/pyrene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C2 fluoranthene/pyrene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C3 fluoranthene/pyrene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C4 fluoranthene/pyrene	ug/L	<0.020	B481343	<0.020	0.020	B485499
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	B481343	<0.0085	0.0085	B485499
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	B481343	<0.0075	0.0075	B485499
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	B481343	<0.0075	0.0075	B485499
C1-Acenaphthene	ug/L	<0.10	B481343	<0.10	0.10	B485499
1-Methylnaphthalene	ug/L	<0.10	B481343	<0.10	0.10	B485499
Extraction Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	123	B481343	99		B485499
D8-ACENAPHTHYLENE (sur.)	%	95	B481343	84		B485499
D8-NAPHTHALENE (sur.)	%	87	B481343	94		B485499
TERPHENYL-D14 (sur.)	%	129	B481343	91		B485499
RDL = Reportable Detection Limit						

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MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CTQ878	CTQ879		
Sampling Date		2024/08/16 12:21	2024/08/15 15:45		
COC Number		292213	292213		
	UNITS	**AEMP-DS-02**	**AEMP-US-01**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B486666
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CTQ878		CTQ879		
Sampling Date		2024/08/16 12:21		2024/08/15 15:45		
COC Number		292213		292213		
	UNITS	**AEMP-DS-02**	**QC Batch**	**AEMP-US-01**	**RDL**	**QC Batch**
Elements						
Dissolved Aluminum (Al)	mg/L	0.020	B486136	0.025	0.0030	B486136
Dissolved Antimony (Sb)	mg/L	<0.00060	B486136	<0.00060	0.00060	B486136
Dissolved Arsenic (As)	mg/L	0.00037	B486136	0.00040	0.00020	B486136
Dissolved Barium (Ba)	mg/L	0.064	B487770	0.044	0.010	B487128
Dissolved Beryllium (Be)	mg/L	<0.0010	B486136	<0.0010	0.0010	B486136
Dissolved Boron (B)	mg/L	0.021	B487770	<0.020	0.020	B487128
Dissolved Calcium (Ca)	mg/L	49	B487770	30	0.30	B487128
Dissolved Chromium (Cr)	mg/L	<0.0010	B486136	<0.0010	0.0010	B486136
Dissolved Cobalt (Co)	mg/L	<0.00030	B486136	<0.00030	0.00030	B486136
Dissolved Copper (Cu)	mg/L	0.0013	B486136	0.0010	0.0010	B486136
Dissolved Iron (Fe)	mg/L	<0.060	B487770	<0.060	0.060	B487128
Dissolved Lead (Pb)	mg/L	<0.00020	B486136	<0.00020	0.00020	B486136
Dissolved Lithium (Li)	mg/L	<0.020	B487770	<0.020	0.020	B487128
Dissolved Magnesium (Mg)	mg/L	17	B487770	9.6	0.20	B487128
Dissolved Manganese (Mn)	mg/L	0.040	B487770	<0.0040	0.0040	B487128
Dissolved Molybdenum (Mo)	mg/L	0.0015	B486136	0.00090	0.00020	B486136
Dissolved Nickel (Ni)	mg/L	0.00099	B486136	0.00083	0.00050	B486136
Dissolved Phosphorus (P)	mg/L	<0.10	B487770	<0.10	0.10	B487128
Dissolved Potassium (K)	mg/L	1.0	B487770	0.85	0.30	B487128
Dissolved Selenium (Se)	mg/L	0.00033	B486136	0.00032	0.00020	B486136
Dissolved Silicon (Si)	mg/L	1.8	B487770	1.3	0.50	B487128
Dissolved Silver (Ag)	mg/L	<0.00010	B486136	<0.00010	0.00010	B486136
Dissolved Sodium (Na)	mg/L	15	B487770	9.3	0.50	B487128
Dissolved Strontium (Sr)	mg/L	0.61	B487770	0.21	0.020	B487128
Dissolved Sulphur (S)	mg/L	28	B487770	13	0.20	B487128
Dissolved Thallium (Tl)	mg/L	<0.00020	B486136	<0.00020	0.00020	B486136
Dissolved Tin (Sn)	mg/L	<0.0010	B486136	<0.0010	0.0010	B486136
Dissolved Titanium (Ti)	mg/L	<0.0010	B486136	<0.0010	0.0010	B486136
Dissolved Uranium (U)	mg/L	0.00086	B486136	0.00066	0.00010	B486136
Dissolved Vanadium (V)	mg/L	<0.0010	B486136	<0.0010	0.0010	B486136
Dissolved Zinc (Zn)	mg/L	<0.0030	B486136	<0.0030	0.0030	B486136
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CTQ878
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/08/16
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486794	N/A	2024/08/22	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B485105	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B485359	N/A	2024/08/20	Tyler Orr
COD by Colorimeter	M/PROB	B486261	N/A	2024/08/21	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486802	N/A	2024/08/22	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B482212	2024/08/21	2024/08/22	Bryanna Quach
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B485028	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487770	N/A	2024/08/22	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/23	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B486136	N/A	2024/08/21	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484977	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486870	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B485182	N/A	2024/08/21	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486591	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B485183	2024/08/21	2024/08/21	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B481343	2024/08/21	2024/08/22	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/23	Automated Statchk
pH @25°C	AT/ALK	B486801	N/A	2024/08/22	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486383	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B487415	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/21	Automated Statchk
Nitrogen (Total)	AC/COL	B485884	2024/08/21	2024/08/21	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487438	2024/08/22	2024/08/23	Thi Boi Tran Nguyen
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

Bureau Veritas ID: CTQ879
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B486794	N/A	2024/08/22	Ayesha Ayesha

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Bureau Veritas Job #: C464061
Report Date: 2024/08/27

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CTQ879
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/08/15
Relinquished: 2024/08/18
Received: 2024/08/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B485491	N/A	2024/08/22	Richard Ly
F1-BTEX	CALC/MS	B485105	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B484348	N/A	2024/08/22	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B484349	N/A	2024/08/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B485359	N/A	2024/08/20	Tyler Orr
COD by Colorimeter	M/PROB	B486261	N/A	2024/08/21	Amy Phan
True Colour	SPEC/COL	B486456	N/A	2024/08/21	Monakint Patel
Carbon (DOC)	TECH	B486452	N/A	2024/08/21	Jill Yuen
Conductivity @25C	COND	B486802	N/A	2024/08/22	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B485501	2024/08/23	2024/08/23	Vian Pereira
Sulphide (as H2S)	CALC	B484351	N/A	2024/08/21	Automated Statchk
Hardness	CALC	B485028	N/A	2024/08/22	Automated Statchk
Mercury (Dissolved) by CV	CV	B486666	2024/08/21	2024/08/22	Kevin Hung
Mercury (Total) by CV	CV	B487142	2024/08/21	2024/08/22	Kevin Hung
Elements by ICP - Dissolved	ICPA	B487128	N/A	2024/08/21	Vincy Scaria
Elements by ICP - Total	ICPA	B489849	2024/08/23	2024/08/24	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B486136	N/A	2024/08/21	Kevin Huang
Elements by ICPMS - Total	ICPM	B489847	2024/08/23	2024/08/24	Jason Bao
Ion Balance	CALC	B484977	N/A	2024/08/23	Automated Statchk
Ammonia-N (Total)	KONE	B486870	N/A	2024/08/21	Adam Fishleigh
Nitrate and Nitrite	CALC	B485182	N/A	2024/08/21	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B486591	N/A	2024/08/21	Adam Fishleigh
Nitrate (as N)	CALC	B485183	2024/08/21	2024/08/21	Automated Statchk
Oil and Grease by IR	IR	B485334	2024/08/23	2024/08/26	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B485499	2024/08/23	2024/08/23	Shuang (Jessica) Chen
Benzo[a]pyrene Equivalency	GC/MSD	B484359	N/A	2024/08/26	Automated Statchk
pH @25°C	AT/ALK	B486801	N/A	2024/08/22	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B486383	N/A	2024/08/21	Mary Anne Dela Cruz
Total Sulphide	SPEC	B486259	N/A	2024/08/21	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B485896	2024/08/21	2024/08/23	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B484639	N/A	2024/08/21	Automated Statchk
Nitrogen (Total)	AC/COL	B485884	2024/08/21	2024/08/21	Yan Lin
Carbon (Total Organic)	TECH	B486502	N/A	2024/08/21	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B485250	2024/08/23	2024/08/26	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B487431	2024/08/22	2024/08/23	Haydee Estilong
Turbidity	TURB	B485511	N/A	2024/08/20	Amy Phan

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GENERAL COMMENTS

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

Package 1	4.3°C

Sample CTQ878 [AEMP-DS-02] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CTQ879 [AEMP-US-01] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B481343	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/21		122	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		126	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		84	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		66	%	50 - 130
			Acenaphthene	2024/08/21	<0.10		ug/L	
			Acenaphthylene	2024/08/21	<0.10		ug/L	
			Acridine	2024/08/21	<0.040		ug/L	
			Anthracene	2024/08/21	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/21	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/21	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/21	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/21	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/21	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/21	<0.050		ug/L	
			Chrysene	2024/08/21	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/21	<0.0075		ug/L	
			Fluoranthene	2024/08/21	<0.010		ug/L	
			Fluorene	2024/08/21	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/21	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/21	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/21	<0.10		ug/L	
			Naphthalene	2024/08/21	<0.10		ug/L	
			Phenanthrene	2024/08/21	<0.050		ug/L	
			Perylene	2024/08/21	<0.050		ug/L	
			Pyrene	2024/08/21	<0.020		ug/L	
			Quinoline	2024/08/21	<0.20		ug/L	
			Retene	2024/08/21	<0.050		ug/L	
			C1-Naphthalene	2024/08/21	<0.10		ug/L	
			C3-Naphthalene	2024/08/21	<0.10		ug/L	
			C4-Naphthalene	2024/08/21	<0.10		ug/L	
			C2-Naphthalene	2024/08/21	<0.10		ug/L	
			Biphenyl	2024/08/21	<0.020		ug/L	
			C1-biphenyl	2024/08/21	<0.020		ug/L	
			C2-biphenyl	2024/08/21	<0.020		ug/L	
			C1-fluorene	2024/08/21	<0.050		ug/L	
			C2-fluorene	2024/08/21	<0.050		ug/L	
			C3-fluorene	2024/08/21	<0.050		ug/L	
			Dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/21	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/21	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/08/21	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C2 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/21	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/21	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/21	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/21	<0.10		ug/L	
B482212	BQU	Method Blank	O-TERPHENYL (sur.)	2024/08/21		86	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21	<0.10		mg/L	
B485250	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/08/26	<2.0		mg/L	
B485334	RRA	Method Blank	Oil and grease	2024/08/26	<2.0		mg/L	
B485359	TOR	Method Blank	Chloride (Cl)	2024/08/20	<1.0		mg/L	
			Sulphate (SO4)	2024/08/20	<1.0		mg/L	
B485491	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/08/21		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		110	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		91	%	50 - 140
			Benzene	2024/08/21	<0.00040		mg/L	
			Toluene	2024/08/21	<0.00040		mg/L	
			Ethylbenzene	2024/08/21	<0.00040		mg/L	
			m & p-Xylene	2024/08/21	<0.00080		mg/L	
			o-Xylene	2024/08/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/08/21	<0.10		mg/L	
B485499	JC7	Method Blank	D10-ANTHRACENE (sur.)	2024/08/23		104	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/23		96	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/23		88	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/23		100	%	50 - 130
			Acenaphthene	2024/08/23	<0.10		ug/L	
			Acenaphthylene	2024/08/23	<0.10		ug/L	
			Acridine	2024/08/23	<0.040		ug/L	
			Anthracene	2024/08/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/08/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/08/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/08/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/08/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/08/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/08/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/08/23	<0.050		ug/L	
			Chrysene	2024/08/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/08/23	<0.0075		ug/L	
			Fluoranthene	2024/08/23	<0.010		ug/L	
			Fluorene	2024/08/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/08/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/08/23	<0.0085		ug/L	
			2-Methylnaphthalene	2024/08/23	<0.10		ug/L	
			Naphthalene	2024/08/23	<0.10		ug/L	
			Phenanthrene	2024/08/23	<0.050		ug/L	
			Perylene	2024/08/23	<0.050		ug/L	
			Pyrene	2024/08/23	<0.020		ug/L	
			Quinoline	2024/08/23	<0.20		ug/L	
			Retene	2024/08/23	<0.050		ug/L	
			C1-Naphthalene	2024/08/23	<0.10		ug/L	
			C3-Naphthalene	2024/08/23	<0.10		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C4-Naphthalene	2024/08/23	<0.10		ug/L	
			C2-Naphthalene	2024/08/23	<0.10		ug/L	
			Biphenyl	2024/08/23	<0.020		ug/L	
			C1-biphenyl	2024/08/23	<0.020		ug/L	
			C2-biphenyl	2024/08/23	<0.020		ug/L	
			C1-fluorene	2024/08/23	<0.050		ug/L	
			C2-fluorene	2024/08/23	<0.050		ug/L	
			C3-fluorene	2024/08/23	<0.050		ug/L	
			Dibenzothiophene	2024/08/23	<0.020		ug/L	
			C1-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/08/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/08/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/08/23	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/08/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/08/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/08/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/08/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/08/23	<0.10		ug/L	
B485501	VP4	Method Blank	O-TERPHENYL (sur.)	2024/08/23		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/23	<0.10		mg/L	
B485511	AP1	Method Blank	Turbidity	2024/08/20	<0.10		NTU	
B485884	YL7	Method Blank	Total Nitrogen (N)	2024/08/21	<0.020		mg/L	
B485896	HE1	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B486136	KH2	Method Blank	Dissolved Aluminum (Al)	2024/08/21	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/08/21	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/08/21	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/08/21	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/08/21	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/08/21	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/08/21	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/08/21	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/08/21	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/08/21	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/08/21	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/08/21	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/08/21	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/08/21	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/08/21	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/08/21	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/08/21	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/08/21	<0.0010		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B486259	LYV	Method Blank	Total Sulphide	2024/08/21	<0.0018		mg/L	
B486261	AP1	Method Blank	Chemical Oxygen Demand	2024/08/21	<10		mg/L	
B486383	MAP	Method Blank	Orthophosphate (P)	2024/08/21	<0.0030		mg/L	
B486452	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486456	MOP	Method Blank	True Colour	2024/08/21	<2.0		PtCo units	
B486502	JYU	Method Blank	Total Organic Carbon (C)	2024/08/21	<0.50		mg/L	
B486591	AFI	Method Blank	Nitrite (N)	2024/08/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/08/21	<0.010		mg/L	
B486666	KHU	Method Blank	Dissolved Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B486794	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/08/22	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/08/22	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/08/22	<1.0		mg/L	
			Carbonate (CO3)	2024/08/22	<1.0		mg/L	
			Hydroxide (OH)	2024/08/22	<1.0		mg/L	
B486802	AYE	Method Blank	Conductivity	2024/08/22	<2.0		uS/cm	
B486870	AFI	Method Blank	Total Ammonia (N)	2024/08/21	<0.015		mg/L	
B487128	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/21	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/21	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/21	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/21	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/21	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/21	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/21	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/21	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/21	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/21	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/21	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/21	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/21	<0.30		mg/L	
B487142	KHU	Method Blank	Total Mercury (Hg)	2024/08/22	<0.0019		ug/L	
B487415	TNY	Method Blank	Total Dissolved Solids	2024/08/23	<10		mg/L	
B487431	HE1	Method Blank	Total Suspended Solids	2024/08/23	<1.0		mg/L	
B487438	TNY	Method Blank	Total Suspended Solids	2024/08/23	<0.99		mg/L	
B487770	VSC	Method Blank	Dissolved Iron (Fe)	2024/08/22	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/08/22	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/08/22	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/08/22	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/08/22	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/08/22	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/08/22	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/08/22	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/08/22	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/08/22	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/08/22	<0.50		mg/L	
			Dissolved Boron (B)	2024/08/22	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/08/22	<0.30		mg/L	
B489847	JAB	Method Blank	Total Aluminum (Al)	2024/08/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/08/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/08/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/08/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/08/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/08/24	<0.00060		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Molybdenum (Mo)	2024/08/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/08/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/08/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/08/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/08/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/08/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/08/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/08/24	<0.0010		mg/L	
			Total Uranium (U)	2024/08/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/08/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/08/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/08/24	<0.0010		mg/L	
B489849	JAB	Method Blank	Total Iron (Fe)	2024/08/24	<0.060		mg/L	
			Total Lithium (Li)	2024/08/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/08/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/08/24	<0.0040		mg/L	
			Total Potassium (K)	2024/08/24	<0.30		mg/L	
			Total Sodium (Na)	2024/08/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/08/24	<0.020		mg/L	
			Total Sulphur (S)	2024/08/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/08/24	<0.10		mg/L	
			Total Barium (Ba)	2024/08/24	<0.010		mg/L	
			Total Silicon (Si)	2024/08/24	<0.50		mg/L	
			Total Boron (B)	2024/08/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/08/24	<0.30		mg/L	
B485499	JC7	Matrix Spike [CTQ879-09]	D10-ANTHRACENE (sur.)	2024/08/23		100	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/23		94	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/23		85	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/23		96	%	50 - 130
			Acenaphthene	2024/08/23		86	%	50 - 130
			Acenaphthylene	2024/08/23		84	%	50 - 130
			Acridine	2024/08/23		81	%	50 - 130
			Anthracene	2024/08/23		80	%	50 - 130
			Benzo(a)anthracene	2024/08/23		76	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/23		78	%	50 - 130
			Benzo(k)fluoranthene	2024/08/23		97	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/23		79	%	50 - 130
			Benzo(c)phenanthrene	2024/08/23		80	%	50 - 130
			Benzo(a)pyrene	2024/08/23		78	%	50 - 130
			Benzo(e)pyrene	2024/08/23		73	%	50 - 130
			Chrysene	2024/08/23		88	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/23		81	%	50 - 130
			Fluoranthene	2024/08/23		83	%	50 - 130
			Fluorene	2024/08/23		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/23		73	%	50 - 130
			2-Methylnaphthalene	2024/08/23		86	%	50 - 130
			Naphthalene	2024/08/23		87	%	50 - 130
			Phenanthrene	2024/08/23		85	%	50 - 130
			Perylene	2024/08/23		78	%	50 - 130
			Pyrene	2024/08/23		84	%	50 - 130
			Quinoline	2024/08/23		100	%	50 - 130
			C1-Naphthalene	2024/08/23		75	%	50 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C3-Naphthalene	2024/08/23		84	%	50 - 130
			C2-Naphthalene	2024/08/23		86	%	50 - 130
			C1-biphenyl	2024/08/23		83	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/23		87	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/23		80	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/23		78	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/23		76	%	30 - 130
			1-Methylnaphthalene	2024/08/23		75	%	50 - 130
B481343	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/21		110	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/21		114	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/21		76	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/21		60	%	50 - 130
			Acenaphthene	2024/08/21		75	%	50 - 130
			Acenaphthylene	2024/08/21		72	%	50 - 130
			Acridine	2024/08/21		87	%	50 - 130
			Anthracene	2024/08/21		82	%	50 - 130
			Benzo(a)anthracene	2024/08/21		89	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/21		91	%	50 - 130
			Benzo(k)fluoranthene	2024/08/21		105	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/21		86	%	50 - 130
			Benzo(c)phenanthrene	2024/08/21		91	%	50 - 130
			Benzo(a)pyrene	2024/08/21		89	%	50 - 130
			Benzo(e)pyrene	2024/08/21		83	%	50 - 130
			Chrysene	2024/08/21		98	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/21		92	%	50 - 130
			Fluoranthene	2024/08/21		93	%	50 - 130
			Fluorene	2024/08/21		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/21		82	%	50 - 130
			2-Methylnaphthalene	2024/08/21		69	%	50 - 130
			Naphthalene	2024/08/21		53	%	50 - 130
			Phenanthrene	2024/08/21		85	%	50 - 130
			Perylene	2024/08/21		85	%	50 - 130
			Pyrene	2024/08/21		93	%	50 - 130
			Quinoline	2024/08/21		98	%	50 - 130
			C1-Naphthalene	2024/08/21		44 (1)	%	50 - 130
			C3-Naphthalene	2024/08/21		72	%	50 - 130
			C2-Naphthalene	2024/08/21		54	%	50 - 130
			C1-biphenyl	2024/08/21		44 (1)	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/21		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/21		91	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/21		90	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/21		91	%	30 - 130
			1-Methylnaphthalene	2024/08/21		44 (1)	%	50 - 130
B482212	BQU	LCS	O-TERPHENYL (sur.)	2024/08/21		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/21		91	%	60 - 140
B485250	RRA	LCS	Total Petroleum Hydrocarbon	2024/08/26		94	%	70 - 130
B485334	RRA	LCS	Oil and grease	2024/08/26		92	%	70 - 130
B485359	TOR	LCS	Chloride (Cl)	2024/08/20		99	%	80 - 120
			Sulphate (SO4)	2024/08/20		99	%	80 - 120
B485491	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/08/21		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/08/21		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/08/21		89	%	50 - 140

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzene	2024/08/21		84	%	60 - 130
			Toluene	2024/08/21		84	%	60 - 130
			Ethylbenzene	2024/08/21		87	%	60 - 130
			m & p-Xylene	2024/08/21		86	%	60 - 130
			o-Xylene	2024/08/21		82	%	60 - 130
			F1 (C6-C10)	2024/08/21		78	%	60 - 140
B485499	JC7	LCS	D10-ANTHRACENE (sur.)	2024/08/23		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/08/23		101	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/08/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/08/23		101	%	50 - 130
			Acenaphthene	2024/08/23		96	%	50 - 130
			Acenaphthylene	2024/08/23		94	%	50 - 130
			Acridine	2024/08/23		94	%	50 - 130
			Anthracene	2024/08/23		92	%	50 - 130
			Benzo(a)anthracene	2024/08/23		91	%	50 - 130
			Benzo(b&j)fluoranthene	2024/08/23		92	%	50 - 130
			Benzo(k)fluoranthene	2024/08/23		115	%	50 - 130
			Benzo(g,h,i)perylene	2024/08/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/08/23		93	%	50 - 130
			Benzo(a)pyrene	2024/08/23		92	%	50 - 130
			Benzo(e)pyrene	2024/08/23		84	%	50 - 130
			Chrysene	2024/08/23		101	%	50 - 130
			Dibenz(a,h)anthracene	2024/08/23		91	%	50 - 130
			Fluoranthene	2024/08/23		96	%	50 - 130
			Fluorene	2024/08/23		96	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/08/23		85	%	50 - 130
			2-Methylnaphthalene	2024/08/23		95	%	50 - 130
			Naphthalene	2024/08/23		96	%	50 - 130
			Phenanthrene	2024/08/23		97	%	50 - 130
			Perylene	2024/08/23		89	%	50 - 130
			Pyrene	2024/08/23		97	%	50 - 130
			Quinoline	2024/08/23		109	%	50 - 130
			C1-Naphthalene	2024/08/23		83	%	50 - 130
			C3-Naphthalene	2024/08/23		93	%	50 - 130
			C2-Naphthalene	2024/08/23		96	%	50 - 130
			C1-biphenyl	2024/08/23		93	%	50 - 130
			C1 phenanthrene/anthracene	2024/08/23		100	%	50 - 130
			C2 phenanthrene/anthracene	2024/08/23		93	%	50 - 130
			C1 fluoranthene/pyrene	2024/08/23		92	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/08/23		94	%	30 - 130
			1-Methylnaphthalene	2024/08/23		83	%	50 - 130
B485501	VP4	LCS	O-TERPHENYL (sur.)	2024/08/24		94	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/08/24		88	%	60 - 140
B485511	AP1	LCS	Turbidity	2024/08/20		100	%	80 - 120
B485884	YL7	LCS	Total Nitrogen (N)	2024/08/21		102	%	80 - 120
B485896	HE1	LCS	Total Dissolved Solids	2024/08/23		96	%	80 - 120
B486136	KH2	LCS	Dissolved Aluminum (Al)	2024/08/21		107	%	80 - 120
			Dissolved Chromium (Cr)	2024/08/21		109	%	80 - 120
			Dissolved Cobalt (Co)	2024/08/21		109	%	80 - 120
			Dissolved Copper (Cu)	2024/08/21		109	%	80 - 120
			Dissolved Lead (Pb)	2024/08/21		106	%	80 - 120
			Dissolved Antimony (Sb)	2024/08/21		112	%	80 - 120

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Molybdenum (Mo)	2024/08/21		106	%	80 - 120
			Dissolved Nickel (Ni)	2024/08/21		109	%	80 - 120
			Dissolved Selenium (Se)	2024/08/21		112	%	80 - 120
			Dissolved Silver (Ag)	2024/08/21		103	%	80 - 120
			Dissolved Arsenic (As)	2024/08/21		112	%	80 - 120
			Dissolved Thallium (Tl)	2024/08/21		105	%	80 - 120
			Dissolved Tin (Sn)	2024/08/21		103	%	80 - 120
			Dissolved Titanium (Ti)	2024/08/21		103	%	80 - 120
			Dissolved Uranium (U)	2024/08/21		105	%	80 - 120
			Dissolved Vanadium (V)	2024/08/21		110	%	80 - 120
			Dissolved Zinc (Zn)	2024/08/21		111	%	80 - 120
			Dissolved Beryllium (Be)	2024/08/21		102	%	80 - 120
B486259	LYV	LCS	Total Sulphide	2024/08/21		105	%	80 - 120
B486261	AP1	LCS	Chemical Oxygen Demand	2024/08/21		99	%	80 - 120
B486383	MAP	LCS	Orthophosphate (P)	2024/08/21		99	%	80 - 120
B486452	JYU	LCS	Dissolved Organic Carbon (C)	2024/08/21		101	%	80 - 120
B486456	MOP	LCS	True Colour	2024/08/21		94	%	80 - 120
B486502	JYU	LCS	Total Organic Carbon (C)	2024/08/21		99	%	80 - 120
B486591	AFI	LCS	Nitrite (N)	2024/08/21		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/08/21		103	%	80 - 120
B486666	KHU	LCS	Dissolved Mercury (Hg)	2024/08/22		96	%	80 - 120
B486794	AYE	LCS	Alkalinity (Total as CaCO3)	2024/08/22		101	%	80 - 120
B486801	AYE	LCS	pH	2024/08/22		100	%	97 - 103
B486802	AYE	LCS	Conductivity	2024/08/22		102	%	90 - 110
B486870	AFI	LCS	Total Ammonia (N)	2024/08/21		101	%	80 - 120
B487128	VSC	LCS	Dissolved Iron (Fe)	2024/08/21		103	%	80 - 120
			Dissolved Lithium (Li)	2024/08/21		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/21		100	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/21		102	%	80 - 120
			Dissolved Potassium (K)	2024/08/21		99	%	80 - 120
			Dissolved Sodium (Na)	2024/08/21		97	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/21		100	%	80 - 120
			Dissolved Sulphur (S)	2024/08/21		99	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/21		102	%	80 - 120
			Dissolved Barium (Ba)	2024/08/21		103	%	80 - 120
			Dissolved Silicon (Si)	2024/08/21		98	%	80 - 120
			Dissolved Boron (B)	2024/08/21		92	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/21		99	%	80 - 120
B487142	KHU	LCS	Total Mercury (Hg)	2024/08/22		92	%	80 - 120
B487415	TNY	LCS	Total Dissolved Solids	2024/08/23		99	%	80 - 120
B487431	HE1	LCS	Total Suspended Solids	2024/08/23		99	%	80 - 120
B487438	TNY	LCS	Total Suspended Solids	2024/08/23		92	%	80 - 120
B487770	VSC	LCS	Dissolved Iron (Fe)	2024/08/22		100	%	80 - 120
			Dissolved Lithium (Li)	2024/08/22		96	%	80 - 120
			Dissolved Magnesium (Mg)	2024/08/22		96	%	80 - 120
			Dissolved Manganese (Mn)	2024/08/22		98	%	80 - 120
			Dissolved Potassium (K)	2024/08/22		96	%	80 - 120
			Dissolved Sodium (Na)	2024/08/22		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/08/22		95	%	80 - 120
			Dissolved Sulphur (S)	2024/08/22		96	%	80 - 120
			Dissolved Phosphorus (P)	2024/08/22		101	%	80 - 120
			Dissolved Barium (Ba)	2024/08/22		99	%	80 - 120

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Silicon (Si)	2024/08/22		96	%	80 - 120
			Dissolved Boron (B)	2024/08/22		99	%	80 - 120
			Dissolved Calcium (Ca)	2024/08/22		97	%	80 - 120
B489847	JAB	LCS	Total Aluminum (Al)	2024/08/24		117	%	80 - 120
			Total Chromium (Cr)	2024/08/24		96	%	80 - 120
			Total Cobalt (Co)	2024/08/24		98	%	80 - 120
			Total Copper (Cu)	2024/08/24		95	%	80 - 120
			Total Lead (Pb)	2024/08/24		102	%	80 - 120
			Total Antimony (Sb)	2024/08/24		99	%	80 - 120
			Total Molybdenum (Mo)	2024/08/24		101	%	80 - 120
			Total Nickel (Ni)	2024/08/24		96	%	80 - 120
			Total Selenium (Se)	2024/08/24		89	%	80 - 120
			Total Silver (Ag)	2024/08/24		99	%	80 - 120
			Total Arsenic (As)	2024/08/24		91	%	80 - 120
			Total Thallium (Tl)	2024/08/24		105	%	80 - 120
			Total Tin (Sn)	2024/08/24		105	%	80 - 120
			Total Titanium (Ti)	2024/08/24		95	%	80 - 120
			Total Uranium (U)	2024/08/24		103	%	80 - 120
			Total Vanadium (V)	2024/08/24		98	%	80 - 120
			Total Zinc (Zn)	2024/08/24		87	%	80 - 120
			Total Beryllium (Be)	2024/08/24		101	%	80 - 120
B489849	JAB	LCS	Total Iron (Fe)	2024/08/23		101	%	80 - 120
			Total Lithium (Li)	2024/08/23		95	%	80 - 120
			Total Magnesium (Mg)	2024/08/23		104	%	80 - 120
			Total Manganese (Mn)	2024/08/23		101	%	80 - 120
			Total Potassium (K)	2024/08/23		96	%	80 - 120
			Total Sodium (Na)	2024/08/23		95	%	80 - 120
			Total Strontium (Sr)	2024/08/23		97	%	80 - 120
			Total Sulphur (S)	2024/08/23		100	%	80 - 120
			Total Phosphorus (P)	2024/08/23		100	%	80 - 120
			Total Barium (Ba)	2024/08/23		100	%	80 - 120
			Total Silicon (Si)	2024/08/23		99	%	80 - 120
			Total Boron (B)	2024/08/23		93	%	80 - 120
			Total Calcium (Ca)	2024/08/23		97	%	80 - 120
B485884	YL7	SRM	Total Nitrogen (N)	2024/08/21		104	%	80 - 120

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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.

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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

VALIDATION SIGNATURE PAGE

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

Elizabeth Chacko, Senior Analyst, Organics

Gita Pokhrel, Laboratory Supervisor

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

Qiliang (Alex) Wu, Senior Analyst

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

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

VALIDATION SIGNATURE PAGE(CONT'D)

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

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

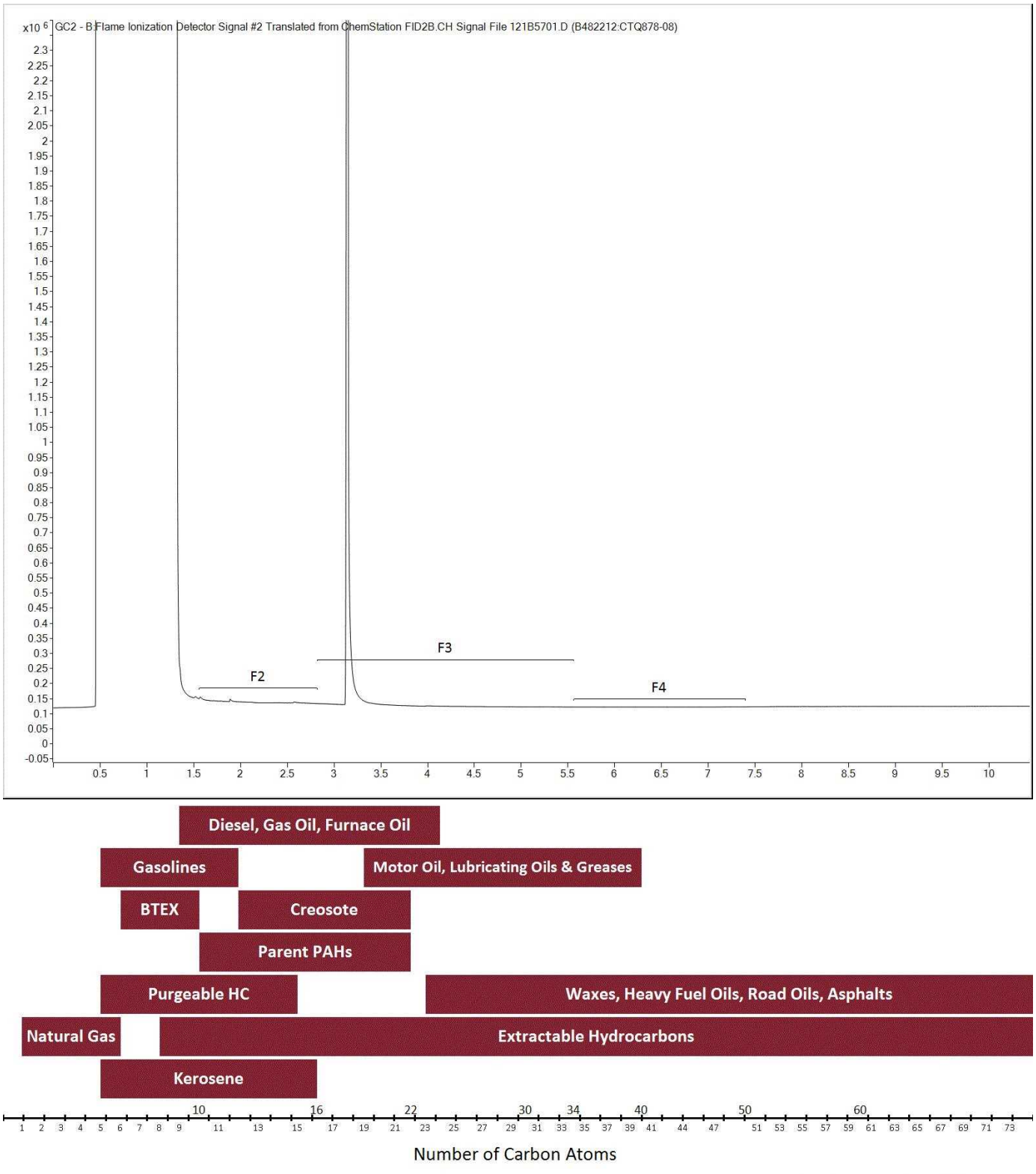
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C464061
Report Date: 2024/08/27
Bureau Veritas Sample: CTQ878

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



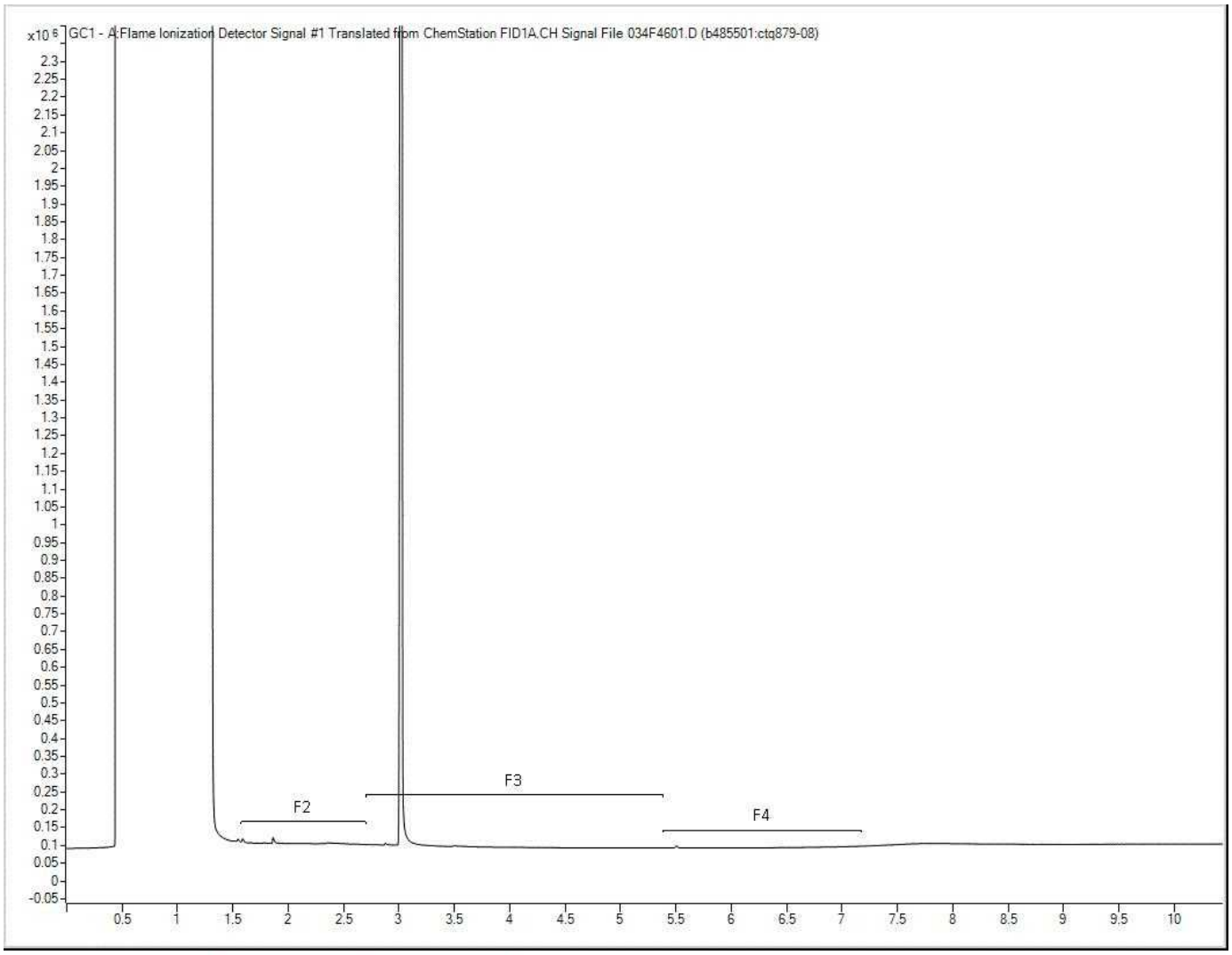
hpchem12\HPchem\1\DATA\2024\08\RUN0821

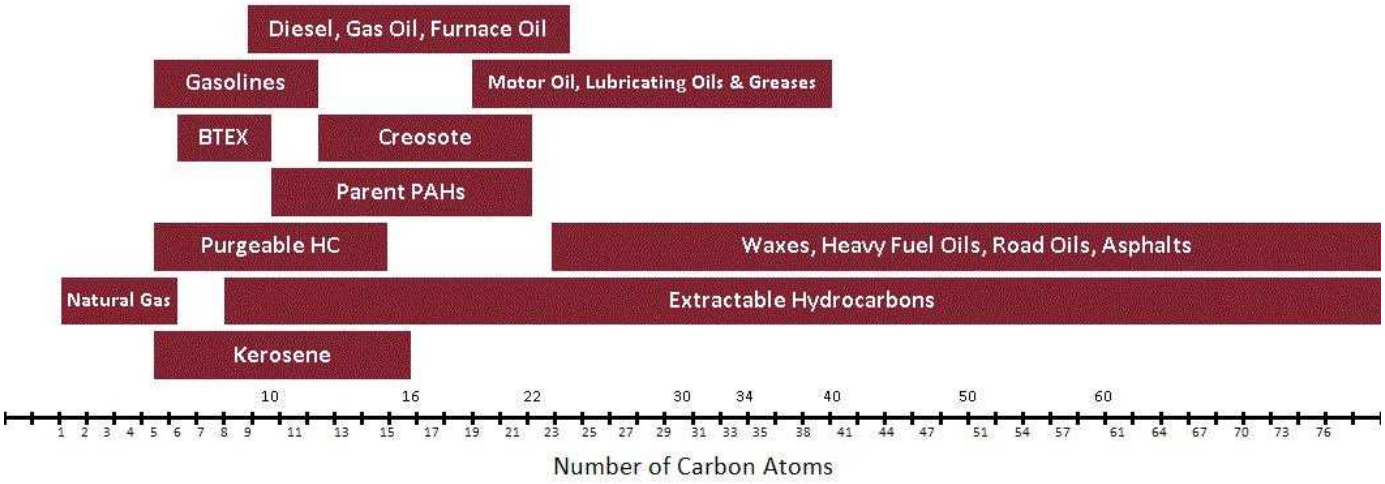
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C464061
Report Date: 2024/08/27
Bureau Veritas Sample: CTQ879

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-US-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





hpchem13\HPchem\1\DATA\2024\08\RUN0823

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292213

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd Calgary, AB T2C 3E7	Address: Same
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587 897 6249	Ph: 587 897 6249
Sampler Name (Print): Stacy Gibb / Nav Hari	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	O/G grease	TOC, Doc, Sulphide	Nitrite, Nitrate, Ammonia (Total) TKN	Orthophosphate	Sulphur - total & dissolved	COD	Alkalinity (total), PAH, TPH
1	AEMP-DS-02		X			18	2024/08/16	12:24	X			X	X							☒	X					X			X	X	X	X	X	X	X	X
2	AEMP-US-01		X			18	2024/08/15	15:45				X	X							☒	X					X			X	X	X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

MED2-2024-08-500

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): NA

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS email canada.chemistry@worley.com cacal_ior_datatrack@worley.com stacy.gibb@worley.com IES A2604436

JARS USED & NOT SUBMITTED Enter N/A for Water: NA

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	4	5	4
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	3.1	3.2	3.2
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

mcal

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C464061

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Stacy Gibb	2024/08/18	10:10	1.	BRENTON MAH	2024/08/19	12:54
2.	BRENTON MAH	2024/08/19	18:00	2.	ATRAUER CIII	2024/08/20	07:00
3.				3.			

SAMPLES
LABELED BY: NGS
VERIFIED BY: S45

COC-1010 (06/2016) IOL-AB White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292226

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562361
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473367
Received: 2024/09/17, 15:20

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	2		Auto Calc
Cadmium - low level CCME - Dissolved	2		Auto Calc
Cadmium - low level CCME (Total)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter	2	AB SOP-00016	SM 24 5220D m
True Colour	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (2)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S)	2		Auto Calc
Hardness	2		Auto Calc
Mercury (Dissolved) by CV (3)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (3)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (3)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance	2		Auto Calc
Ammonia-N (Total)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N)	2		Auto Calc
Oil and Grease by IR	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (4)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (5)	2		Auto Calc
pH @25°C (6)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (7)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292226

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562361
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473367
Received: 2024/09/17, 15:20

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	2	BBY WI-00033	Auto Calc
Nitrogen (Total)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (8)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR)	2	AB SOP-00061	SM 24 2540 D m
Turbidity	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) Silica gel clean up employed.
(3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(4) Alkylated PAH results are semiquantitative

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292226

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562361
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473367

Received: 2024/09/17, 15:20

(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(6) 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.
(7) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(8) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
26 Sep 2024 09:46:32

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CVQ853			CVQ853			CVQ854		
Sampling Date		2024/09/13 12:10			2024/09/13 12:10			2024/09/13 12:11		
COC Number		292226			292226			292226		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	B528008				<0.10	0.10	B528008
Volatiles										
Benzene	mg/L	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866
Toluene	mg/L	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866
Ethylbenzene	mg/L	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866
m & p-Xylene	mg/L	<0.00080	0.00080	B526866	<0.00080	0.00080	B526866	<0.00080	0.00080	B526866
o-Xylene	mg/L	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866	<0.00040	0.00040	B526866
Xylenes (Total)	mg/L	<0.00089	0.00089	B525308				<0.00089	0.00089	B525308
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	B525308				<0.10	0.10	B525308
F1 (C6-C10)	mg/L	<0.10	0.10	B526866	<0.10	0.10	B526866	<0.10	0.10	B526866
Extraction Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	90		B528008				91		B528008
Instrument Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	94		B526866	90		B526866	94		B526866
4-Bromofluorobenzene (sur.)	%	101		B526866	102		B526866	102		B526866
D4-1,2-Dichloroethane (sur.)	%	99		B526866	100		B526866	103		B526866

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CVQ853			CVQ853			CVQ854		
Sampling Date		2024/09/13 12:10			2024/09/13 12:10			2024/09/13 12:11		
COC Number		292226			292226			292226		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Calculated Parameters										
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.12	0.020	B525380				0.21	0.20	B525380
Nutrients										
Total Nitrogen (N)	mg/L	0.14	0.020	B527350	0.13	0.020	B527350	0.25 (1)	0.20	B527350

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVQ853	CVQ854		
Sampling Date		2024/09/13 12:10	2024/09/13 12:11		
COC Number		292226	292226		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**
Elements					
Total Cadmium (Cd)	mg/L	<0.000020	<0.000020	0.000020	B525123
Total Aluminum (Al)	mg/L	0.074	0.059	0.0030	B532937
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B532937
Total Arsenic (As)	mg/L	0.00022	0.00023	0.00020	B532937
Total Barium (Ba)	mg/L	0.082	0.084	0.010	B532939
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B532937
Total Boron (B)	mg/L	0.040	0.050	0.020	B532939
Total Calcium (Ca)	mg/L	84	86	0.30	B532939
Total Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B532937
Total Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B532937
Total Copper (Cu)	mg/L	<0.0010	<0.0010	0.0010	B532937
Total Iron (Fe)	mg/L	0.18	0.16	0.060	B532939
Total Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B532937
Total Lithium (Li)	mg/L	<0.020	<0.020	0.020	B532939
Total Magnesium (Mg)	mg/L	32	33	0.20	B532939
Total Manganese (Mn)	mg/L	0.011	0.011	0.0040	B532939
Total Molybdenum (Mo)	mg/L	0.0059	0.0019	0.00020	B532937
Total Nickel (Ni)	mg/L	0.00075	0.00061	0.00050	B532937
Total Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B532939
Total Potassium (K)	mg/L	1.2	1.2	0.30	B532939
Total Selenium (Se)	mg/L	<0.00020	<0.00020	0.00020	B532937
Total Silicon (Si)	mg/L	2.2	2.2	0.50	B532939
Total Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B532937
Total Sodium (Na)	mg/L	34	34	0.50	B532939
Total Strontium (Sr)	mg/L	1.6	1.6	0.020	B532939
Total Sulphur (S)	mg/L	57	58	0.20	B532939
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B532937
Total Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B532937
Total Titanium (Ti)	mg/L	<0.0010	0.0019	0.0010	B532937
Total Uranium (U)	mg/L	0.0012	0.0011	0.00010	B532937
Total Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B532937
RDL = Reportable Detection Limit					

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REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVQ853	CVQ854		
Sampling Date		2024/09/13 12:10	2024/09/13 12:11		
COC Number		292226	292226		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B532937
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ853			CVQ853			CVQ854		
Sampling Date		2024/09/13 12:10			2024/09/13 12:10			2024/09/13 12:11		
COC Number		292226			292226			292226		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	350	0.50	B525286				350	0.50	B525286
Ion Balance (% Difference)	%	2.6	N/A	B525287				1.3	N/A	B525287
Nitrate (N)	mg/L	0.028	0.010	B525379				0.040	0.010	B525379
Nitrate (NO3)	mg/L	0.12	0.044	B525377				0.18	0.044	B525377
Nitrite (NO2)	mg/L	<0.033	0.033	B525377				<0.033	0.033	B525377
Sulphide (as H2S)	mg/L	0.011	0.0020	B525372				0.0084	0.0020	B525372
Demand Parameters										
Chemical Oxygen Demand	mg/L	<10 (1)	10	B527537	<10	10	B527537	<10 (1)	10	B527537
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B525238				<0.000020	0.000020	B525238
Misc. Inorganics										
Conductivity	uS/cm	800	2.0	B528173				800	2.0	B527873
Dissolved Organic Carbon (C)	mg/L	2.9	0.50	B527874				1.8	0.50	B527874
pH	pH	8.25	N/A	B528171				7.92	N/A	B527871
Total Organic Carbon (C)	mg/L	2.3	0.50	B527743				2.1	0.50	B527743
Total Dissolved Solids	mg/L	490	10	B527220				490	10	B527220
Total Suspended Solids	mg/L	<1.0	1.0	B527228				<1.0	1.0	B527228
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B528119				<1.0	1.0	B527857
Alkalinity (Total as CaCO3)	mg/L	210	1.0	B528119				190	1.0	B527857
Bicarbonate (HCO3)	mg/L	250	1.0	B528119				230	1.0	B527857
Carbonate (CO3)	mg/L	<1.0	1.0	B528119				<1.0	1.0	B527857
Hydroxide (OH)	mg/L	<1.0	1.0	B528119				<1.0	1.0	B527857
Total Sulphide	mg/L	0.0099	0.0018	B526631				0.0079	0.0018	B526631
Chloride (Cl)	mg/L	37	1.0	B528471				39	1.0	B527093
Sulphate (SO4)	mg/L	180	5.0	B528471				180	5.0	B527093
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B526223				<0.015	0.015	B526223

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ853			CVQ853			CVQ854		
Sampling Date		2024/09/13 12:10			2024/09/13 12:10			2024/09/13 12:11		
COC Number		292226			292226			292226		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B527878	<0.0030	0.0030	B527878	<0.0030	0.0030	B527878
Nitrite (N)	mg/L	<0.010	0.010	B528431				<0.010	0.010	B527661
Nitrate plus Nitrite (N)	mg/L	0.028	0.010	B528431				0.040	0.010	B527661
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B525087				<2.0	2.0	B525087
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B525265				<2.0	2.0	B525265
Physical Properties										
True Colour	PtCo units	4.4	2.0	B528625	4.7	2.0	B528625	4.2	2.0	B528625
Physical Properties										
Turbidity	NTU	<0.10	0.10	B526408				<0.10	0.10	B526408

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ853	CVQ854		
Sampling Date		2024/09/13 12:10	2024/09/13 12:11		
COC Number		292226	292226		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B525383
Acenaphthene	ug/L	<0.10	<0.10	0.10	B527995
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B527995
Acridine	ug/L	<0.040	<0.040	0.040	B527995
Anthracene	ug/L	<0.010	<0.010	0.010	B527995
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B527995
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B527995
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B527995
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B527995
Fluoranthene	ug/L	<0.010	<0.010	0.010	B527995
Fluorene	ug/L	<0.050	<0.050	0.050	B527995
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B527995
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B527995
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B527995
Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
Phenanthrene	ug/L	<0.050	<0.050	0.050	B527995
Perylene	ug/L	<0.050	<0.050	0.050	B527995
Pyrene	ug/L	<0.020	<0.020	0.020	B527995
Quinoline	ug/L	<0.20	<0.20	0.20	B527995
Retene	ug/L	<0.050	<0.050	0.050	B527995
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
Biphenyl	ug/L	<0.020	<0.020	0.020	B527995
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B527995
RDL = Reportable Detection Limit					

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ853	CVQ854		
Sampling Date		2024/09/13 12:10	2024/09/13 12:11		
COC Number		292226	292226		
	UNITS	**AEMP-DS-01**	**AEMP-DUP1**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B527995
C1-fluorene	ug/L	<0.050	<0.050	0.050	B527995
C2-fluorene	ug/L	<0.050	<0.050	0.050	B527995
C3-fluorene	ug/L	<0.050	<0.050	0.050	B527995
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B527995
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B527995
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B527995
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B527995
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B527995
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B527995
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B527995
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B527995
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B527995
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B527995
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B527995
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B527995
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	116	103		B527995
D8-ACENAPHTHYLENE (sur.)	%	102	91		B527995
D8-NAPHTHALENE (sur.)	%	88	80		B527995
TERPHENYL-D14 (sur.)	%	125	107		B527995
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CVQ853			CVQ853			CVQ854		
Sampling Date		2024/09/13 12:10			2024/09/13 12:10			2024/09/13 12:11		
COC Number		292226			292226			292226		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Elements										
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	B529810	<0.0019	0.0019	B529810	<0.0019	0.0019	B529810
Total Mercury (Hg)	ug/L	<0.0019	0.0019	B528705				<0.0019	0.0019	B528705

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVQ853			CVQ853			CVQ854		
Sampling Date		2024/09/13 12:10			2024/09/13 12:10			2024/09/13 12:11		
COC Number		292226			292226			292226		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Elements										
Dissolved Aluminum (Al)	mg/L	0.0046	0.0030	B528825	0.0030	0.0030	B528825	0.0039	0.0030	B528825
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	B528825	<0.00060	0.00060	B528825	<0.00060	0.00060	B528825
Dissolved Arsenic (As)	mg/L	0.00025	0.00020	B528825	<0.00020	0.00020	B528825	<0.00020	0.00020	B528825
Dissolved Barium (Ba)	mg/L	0.083	0.010	B529465	0.082	0.010	B529465	0.082	0.010	B529465
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825
Dissolved Boron (B)	mg/L	0.042	0.020	B529465	0.039	0.020	B529465	0.034	0.020	B529465
Dissolved Calcium (Ca)	mg/L	85	0.30	B529465	84	0.30	B529465	84	0.30	B529465
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00030	B528825	<0.00030	0.00030	B528825	<0.00030	0.00030	B528825
Dissolved Copper (Cu)	mg/L	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825
Dissolved Iron (Fe)	mg/L	<0.060	0.060	B529465	<0.060	0.060	B529465	<0.060	0.060	B529465
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	B528825	<0.00020	0.00020	B528825	<0.00020	0.00020	B528825
Dissolved Lithium (Li)	mg/L	0.036	0.020	B529465	0.030	0.020	B529465	<0.020	0.020	B529465
Dissolved Magnesium (Mg)	mg/L	33	0.20	B529465	32	0.20	B529465	33	0.20	B529465
Dissolved Manganese (Mn)	mg/L	0.0069	0.0040	B529465	0.0070	0.0040	B529465	0.0069	0.0040	B529465
Dissolved Molybdenum (Mo)	mg/L	0.0017	0.00020	B528825	0.0017	0.00020	B528825	0.0017	0.00020	B528825
Dissolved Nickel (Ni)	mg/L	<0.00050	0.00050	B532400				<0.00050	0.00050	B532400
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	B529465	<0.10	0.10	B529465	<0.10	0.10	B529465
Dissolved Potassium (K)	mg/L	1.2	0.30	B529465	1.2	0.30	B529465	1.2	0.30	B529465
Dissolved Selenium (Se)	mg/L	0.00031	0.00020	B528825	0.00030	0.00020	B528825	0.00032	0.00020	B528825
Dissolved Silicon (Si)	mg/L	2.0	0.50	B529465	2.0	0.50	B529465	2.0	0.50	B529465
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	B528825	<0.00010	0.00010	B528825	<0.00010	0.00010	B528825
Dissolved Sodium (Na)	mg/L	33	0.50	B529465	33	0.50	B529465	33	0.50	B529465
Dissolved Strontium (Sr)	mg/L	1.6	0.020	B529465	1.6	0.020	B529465	1.6	0.020	B529465
Dissolved Sulphur (S)	mg/L	59	0.20	B529465	60	0.20	B529465	60	0.20	B529465
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	B528825	<0.00020	0.00020	B528825	<0.00020	0.00020	B528825
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825
Dissolved Uranium (U)	mg/L	0.0011	0.00010	B528825	0.0010	0.00010	B528825	0.0011	0.00010	B528825
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825	<0.0010	0.0010	B528825

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVQ853			CVQ853			CVQ854		
Sampling Date		2024/09/13 12:10			2024/09/13 12:10			2024/09/13 12:11		
COC Number		292226			292226			292226		
	UNITS	**AEMP-DS-01**	**RDL**	**QC Batch**	**AEMP-DS-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DUP1**	**RDL**	**QC Batch**
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	B528825	<0.0030	0.0030	B528825	<0.0030	0.0030	B528825

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ853
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B528119	N/A	2024/09/20	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B526866	N/A	2024/09/21	Wonjeong Park
F1-BTEX	CALC/MS	B525308	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B525238	N/A	2024/09/20	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B525123	N/A	2024/09/24	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B528471	N/A	2024/09/19	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B527537	N/A	2024/09/19	Amy Phan
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen
Conductivity @25C	COND	B528173	N/A	2024/09/20	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B525372	N/A	2024/09/18	Automated Statchk
Hardness	CALC	B525286	N/A	2024/09/20	Automated Statchk
Mercury (Dissolved) by CV	CV	B529810	2024/09/20	2024/09/20	Kevin Hung
Mercury (Total) by CV	CV	B528705	2024/09/19	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B529465	N/A	2024/09/20	Jason Bao
Elements by ICP - Total	ICPA	B532939	2024/09/23	2024/09/24	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B528825	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B532937	2024/09/23	2024/09/24	Jason Bao
Ion Balance	CALC	B525287	N/A	2024/09/20	Automated Statchk
Ammonia-N (Total)	KONE	B526223	N/A	2024/09/18	Adam Fishleigh
Nitrate and Nitrite	CALC	B525377	N/A	2024/09/20	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B528431	N/A	2024/09/19	Isabelle White
Nitrate (as N)	CALC	B525379	2024/09/20	2024/09/20	Automated Statchk
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B525383	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B528171	N/A	2024/09/20	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Total Sulphide	SPEC	B526631	N/A	2024/09/18	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B527220	2024/09/19	2024/09/20	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B525380	N/A	2024/09/20	Automated Statchk
Nitrogen (Total)	AC/COL	B527350	2024/09/19	2024/09/19	Yan Lin
Carbon (Total Organic)	TECH	B527743	N/A	2024/09/19	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B527228	2024/09/19	2024/09/19	Haydee Estilong
Turbidity	TURB	B526408	N/A	2024/09/18	Dafne Strozake Maximo

Bureau Veritas ID: CVQ853 Dup
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B526866	N/A	2024/09/21	Wonjeong Park

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Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ853 Dup
Sample ID: AEMP-DS-01
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
COD by Colorimeter	M/PROB	B527537	N/A	2024/09/19	Amy Phan
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Mercury (Dissolved) by CV	CV	B529810	2024/09/20	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B529465	N/A	2024/09/20	Jason Bao
Elements by ICPMS - Dissolved	ICPM	B528825	N/A	2024/09/20	Kevin Huang
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Nitrogen (Total)	AC/COL	B527350	2024/09/19	2024/09/19	Yan Lin

Bureau Veritas ID: CVQ854
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B527857	N/A	2024/09/19	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B526866	N/A	2024/09/21	Wonjeong Park
F1-BTEX	CALC/MS	B525308	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B525238	N/A	2024/09/20	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B525123	N/A	2024/09/24	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B527093	N/A	2024/09/18	Tyler Orr
COD by Colorimeter	M/PROB	B527537	N/A	2024/09/19	Amy Phan
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen
Conductivity @25C	COND	B527873	N/A	2024/09/19	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/21	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B525372	N/A	2024/09/18	Automated Statchk
Hardness	CALC	B525286	N/A	2024/09/20	Automated Statchk
Mercury (Dissolved) by CV	CV	B529810	2024/09/20	2024/09/20	Kevin Hung
Mercury (Total) by CV	CV	B528705	2024/09/19	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B529465	N/A	2024/09/20	Jason Bao
Elements by ICP - Total	ICPA	B532939	2024/09/23	2024/09/24	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B528825	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B532937	2024/09/23	2024/09/24	Jason Bao
Ion Balance	CALC	B525287	N/A	2024/09/20	Automated Statchk
Ammonia-N (Total)	KONE	B526223	N/A	2024/09/18	Adam Fishleigh
Nitrate and Nitrite	CALC	B525377	N/A	2024/09/19	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B527661	N/A	2024/09/19	Isabelle White
Nitrate (as N)	CALC	B525379	2024/09/19	2024/09/19	Automated Statchk
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B525383	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B527871	N/A	2024/09/19	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Total Sulphide	SPEC	B526631	N/A	2024/09/18	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B527220	2024/09/19	2024/09/20	Haydee Estilong

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Bureau Veritas Job #: C473367
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ854
Sample ID: AEMP-DUP1
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Kjeldahl Nitrogen (Total)	CALC	B525380	N/A	2024/09/19	Automated Statchk
Nitrogen (Total)	AC/COL	B527350	2024/09/19	2024/09/19	Yan Lin
Carbon (Total Organic)	TECH	B527743	N/A	2024/09/19	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B527228	2024/09/19	2024/09/19	Haydee Estilong
Turbidity	TURB	B526408	N/A	2024/09/18	Dafne Strozake Maximo

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GENERAL COMMENTS

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

Package 1	4.9°C

Note: C of C information incomplete; The following fields were not filled out: IOL Project #, Task Order, and Relinquished Time. Alex Haigh was notified via email.

Sample CVQ853 [AEMP-DS-01] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CVQ854 [AEMP-DUP1] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for True Colour.

Sample CVQ853, Elements by ICPMS - Dissolved: Test repeated.
Sample CVQ854, Elements by ICPMS - Dissolved: Test repeated.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B525087	RRA	Method Blank	Oil and grease	2024/09/18	<2.0		mg/L	
B525265	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/09/18	<2.0		mg/L	
B526223	AFI	Method Blank	Total Ammonia (N)	2024/09/18	<0.015		mg/L	
B526408	DSX	Method Blank	Turbidity	2024/09/18	<0.10		NTU	
B526631	LYV	Method Blank	Total Sulphide	2024/09/18	<0.0018		mg/L	
B526866	WPK	Method Blank	1,4-Difluorobenzene (sur.)	2024/09/21		93	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		99	%	50 - 140
			Benzene	2024/09/21	<0.00040		mg/L	
			Toluene	2024/09/21	<0.00040		mg/L	
			Ethylbenzene	2024/09/21	<0.00040		mg/L	
			m & p-Xylene	2024/09/21	<0.00080		mg/L	
			o-Xylene	2024/09/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/09/21	<0.10		mg/L	
B527093	TOR	Method Blank	Chloride (Cl)	2024/09/18	<1.0		mg/L	
			Sulphate (SO4)	2024/09/18	<1.0		mg/L	
B527220	HE1	Method Blank	Total Dissolved Solids	2024/09/20	<10		mg/L	
B527228	HE1	Method Blank	Total Suspended Solids	2024/09/19	<1.0		mg/L	
B527350	YL7	Method Blank	Total Nitrogen (N)	2024/09/19	<0.020		mg/L	
B527537	AP1	Method Blank	Chemical Oxygen Demand	2024/09/19	<10		mg/L	
B527661	ISW	Method Blank	Nitrite (N)	2024/09/19	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/19	<0.010		mg/L	
B527743	JYU	Method Blank	Total Organic Carbon (C)	2024/09/19	<0.50		mg/L	
B527857	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/19	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/19	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/19	<1.0		mg/L	
			Carbonate (CO3)	2024/09/19	<1.0		mg/L	
			Hydroxide (OH)	2024/09/19	<1.0		mg/L	
B527873	AYE	Method Blank	Conductivity	2024/09/19	<2.0		uS/cm	
B527874	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/09/19	<0.50		mg/L	
B527878	YL7	Method Blank	Orthophosphate (P)	2024/09/19	<0.0030		mg/L	
B527995	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/09/23		103	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		107	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		86	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		68	%	50 - 130
			Acenaphthene	2024/09/23	<0.10		ug/L	
			Acenaphthylene	2024/09/23	<0.10		ug/L	
			Acridine	2024/09/23	<0.040		ug/L	
			Anthracene	2024/09/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/09/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/09/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/09/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/09/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/09/23	<0.050		ug/L	
			Chrysene	2024/09/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/09/23	<0.0075		ug/L	
			Fluoranthene	2024/09/23	<0.010		ug/L	
			Fluorene	2024/09/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/09/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/09/23	<0.0085		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			2-Methylnaphthalene	2024/09/23	<0.10		ug/L	
			Naphthalene	2024/09/23	<0.10		ug/L	
			Phenanthrene	2024/09/23	<0.050		ug/L	
			Perylene	2024/09/23	<0.050		ug/L	
			Pyrene	2024/09/23	<0.020		ug/L	
			Quinoline	2024/09/23	<0.20		ug/L	
			Retene	2024/09/23	<0.050		ug/L	
			C1-Naphthalene	2024/09/23	<0.10		ug/L	
			C3-Naphthalene	2024/09/23	<0.10		ug/L	
			C4-Naphthalene	2024/09/23	<0.10		ug/L	
			C2-Naphthalene	2024/09/23	<0.10		ug/L	
			Biphenyl	2024/09/23	<0.020		ug/L	
			C1-biphenyl	2024/09/23	<0.020		ug/L	
			C2-biphenyl	2024/09/23	<0.020		ug/L	
			C1-fluorene	2024/09/23	<0.050		ug/L	
			C2-fluorene	2024/09/23	<0.050		ug/L	
			C3-fluorene	2024/09/23	<0.050		ug/L	
			Dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/09/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/09/23	<0.10		ug/L	
B528008	CHA	Method Blank	O-TERPHENYL (sur.)	2024/09/21		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21	<0.10		mg/L	
B528119	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/20	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/20	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/20	<1.0		mg/L	
			Carbonate (CO3)	2024/09/20	<1.0		mg/L	
			Hydroxide (OH)	2024/09/20	<1.0		mg/L	
B528173	AYE	Method Blank	Conductivity	2024/09/20	<2.0		uS/cm	
B528431	ISW	Method Blank	Nitrite (N)	2024/09/19	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/19	<0.010		mg/L	
B528471	HAP	Method Blank	Chloride (Cl)	2024/09/19	<1.0		mg/L	
			Sulphate (SO4)	2024/09/19	<1.0		mg/L	
B528625	TOR	Method Blank	True Colour	2024/09/19	<2.0		PtCo units	
B528705	KHU	Method Blank	Total Mercury (Hg)	2024/09/20	<0.0019		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B528825	KH2	Method Blank	Dissolved Aluminum (Al)	2024/09/20	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/09/20	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/09/20	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/09/20	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/09/20	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/09/20	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/09/20	<0.00020		mg/L	
			Dissolved Selenium (Se)	2024/09/20	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/09/20	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/09/20	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/09/20	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/09/20	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/09/20	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/09/20	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/09/20	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/09/20	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/09/20	<0.0010		mg/L	
B529465	JAB	Method Blank	Dissolved Iron (Fe)	2024/09/20	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/20	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/20	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/20	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/20	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/20	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/20	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/20	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/20	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/20	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/20	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/20	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/20	<0.30		mg/L	
B529810	KHU	Method Blank	Dissolved Mercury (Hg)	2024/09/20	<0.0019		ug/L	
B532400	KH2	Method Blank	Dissolved Nickel (Ni)	2024/09/23	<0.00050		mg/L	
B532937	JAB	Method Blank	Total Aluminum (Al)	2024/09/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/24	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/24	<0.0010		mg/L	
			Total Uranium (U)	2024/09/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/24	<0.0010		mg/L	
B532939	VSC	Method Blank	Total Iron (Fe)	2024/09/24	<0.060		mg/L	
			Total Lithium (Li)	2024/09/24	<0.020		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Magnesium (Mg)	2024/09/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/24	<0.0040		mg/L	
			Total Potassium (K)	2024/09/24	<0.30		mg/L	
			Total Sodium (Na)	2024/09/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/24	<0.020		mg/L	
			Total Sulphur (S)	2024/09/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/24	<0.10		mg/L	
			Total Barium (Ba)	2024/09/24	<0.010		mg/L	
			Total Silicon (Si)	2024/09/24	<0.50		mg/L	
			Total Boron (B)	2024/09/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/24	<0.30		mg/L	
B526866	WPK	RPD [CVQ853-11]	Benzene	2024/09/21	NC		%	30
			Toluene	2024/09/21	NC		%	30
			Ethylbenzene	2024/09/21	NC		%	30
			m & p-Xylene	2024/09/21	NC		%	30
			o-Xylene	2024/09/21	NC		%	30
			F1 (C6-C10)	2024/09/21	NC		%	30
B527350	YL7	RPD [CVQ853-06]	Total Nitrogen (N)	2024/09/19	10		%	20
B527537	AP1	RPD [CVQ853-06]	Chemical Oxygen Demand	2024/09/19	NC		%	20
B527878	YL7	RPD [CVQ853-02]	Orthophosphate (P)	2024/09/19	NC		%	20
B528625	TOR	RPD [CVQ853-02]	True Colour	2024/09/19	6.5		%	20
B528825	KH2	RPD [CVQ853-03]	Dissolved Aluminum (Al)	2024/09/20	NC		%	20
			Dissolved Chromium (Cr)	2024/09/20	NC		%	20
			Dissolved Cobalt (Co)	2024/09/20	NC		%	20
			Dissolved Copper (Cu)	2024/09/20	NC		%	20
			Dissolved Lead (Pb)	2024/09/20	NC		%	20
			Dissolved Antimony (Sb)	2024/09/20	NC		%	20
			Dissolved Molybdenum (Mo)	2024/09/20	1.2		%	20
			Dissolved Selenium (Se)	2024/09/20	0.33		%	20
			Dissolved Silver (Ag)	2024/09/20	NC		%	20
			Dissolved Arsenic (As)	2024/09/20	NC		%	20
			Dissolved Thallium (Tl)	2024/09/20	NC		%	20
			Dissolved Tin (Sn)	2024/09/20	NC		%	20
			Dissolved Titanium (Ti)	2024/09/20	NC		%	20
			Dissolved Uranium (U)	2024/09/20	4.5		%	20
			Dissolved Vanadium (V)	2024/09/20	NC		%	20
			Dissolved Zinc (Zn)	2024/09/20	NC		%	20
			Dissolved Beryllium (Be)	2024/09/20	NC		%	20
B529465	JAB	RPD [CVQ853-03]	Dissolved Iron (Fe)	2024/09/20	NC		%	20
			Dissolved Lithium (Li)	2024/09/20	18		%	20
			Dissolved Magnesium (Mg)	2024/09/20	1.7		%	20
			Dissolved Manganese (Mn)	2024/09/20	1.3		%	20
			Dissolved Potassium (K)	2024/09/20	2.0		%	20
			Dissolved Sodium (Na)	2024/09/20	1.3		%	20
			Dissolved Strontium (Sr)	2024/09/20	0.26		%	20
			Dissolved Sulphur (S)	2024/09/20	1.1		%	20
			Dissolved Phosphorus (P)	2024/09/20	NC		%	20
			Dissolved Barium (Ba)	2024/09/20	0.82		%	20
			Dissolved Silicon (Si)	2024/09/20	0.33		%	20
			Dissolved Boron (B)	2024/09/20	9.0		%	20
			Dissolved Calcium (Ca)	2024/09/20	1.6		%	20
B529810	KHU	RPD [CVQ853-08]	Dissolved Mercury (Hg)	2024/09/20	NC		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B526866	WPK	Matrix Spike [CVQ854-11]	1,4-Difluorobenzene (sur.)	2024/09/21		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		100	%	50 - 140
			Benzene	2024/09/21		97	%	50 - 140
			Toluene	2024/09/21		97	%	50 - 140
			Ethylbenzene	2024/09/21		101	%	50 - 140
			m & p-Xylene	2024/09/21		96	%	50 - 140
			o-Xylene	2024/09/21		99	%	50 - 140
			F1 (C6-C10)	2024/09/21		72	%	60 - 140
B527350	YL7	Matrix Spike [CVQ853-06]	Total Nitrogen (N)	2024/09/19		101	%	80 - 120
B527537	AP1	Matrix Spike [CVQ853-06]	Chemical Oxygen Demand	2024/09/19		104	%	80 - 120
B527878	YL7	Matrix Spike [CVQ853-02]	Orthophosphate (P)	2024/09/19		103	%	80 - 120
B527995	DM	Matrix Spike [CVQ853-13]	D10-ANTHRACENE (sur.)	2024/09/23		109	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		112	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		71	%	50 - 130
			Acenaphthene	2024/09/23		74	%	50 - 130
			Acenaphthylene	2024/09/23		78	%	50 - 130
			Acridine	2024/09/23		77	%	50 - 130
			Anthracene	2024/09/23		78	%	50 - 130
			Benzo(a)anthracene	2024/09/23		92	%	50 - 130
			Benzo(b&j)fluoranthene	2024/09/23		90	%	50 - 130
			Benzo(k)fluoranthene	2024/09/23		83	%	50 - 130
			Benzo(g,h,i)perylene	2024/09/23		81	%	50 - 130
			Benzo(c)phenanthrene	2024/09/23		90	%	50 - 130
			Benzo(a)pyrene	2024/09/23		91	%	50 - 130
			Benzo(e)pyrene	2024/09/23		79	%	50 - 130
			Chrysene	2024/09/23		87	%	50 - 130
			Dibenz(a,h)anthracene	2024/09/23		89	%	50 - 130
			Fluoranthene	2024/09/23		93	%	50 - 130
			Fluorene	2024/09/23		83	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/09/23		90	%	50 - 130
			2-Methylnaphthalene	2024/09/23		57	%	50 - 130
			Naphthalene	2024/09/23		60	%	50 - 130
			Phenanthrene	2024/09/23		81	%	50 - 130
			Perylene	2024/09/23		74	%	50 - 130
			Pyrene	2024/09/23		94	%	50 - 130
			Quinoline	2024/09/23		90	%	50 - 130
			C1-Naphthalene	2024/09/23		54	%	50 - 130
			C3-Naphthalene	2024/09/23		77	%	50 - 130
			C2-Naphthalene	2024/09/23		62	%	50 - 130
			C1-biphenyl	2024/09/23		53	%	50 - 130
			C1 phenanthrene/anthracene	2024/09/23		98	%	50 - 130
			C2 phenanthrene/anthracene	2024/09/23		93	%	50 - 130
			C1 fluoranthene/pyrene	2024/09/23		93	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/09/23		80	%	30 - 130
			1-Methylnaphthalene	2024/09/23		54	%	50 - 130
B528008	CHA	Matrix Spike [CVQ854-12]	O-TERPHENYL (sur.)	2024/09/22		94	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/22		83	%	60 - 140
B528625	TOR	Matrix Spike [CVQ853-02]	True Colour	2024/09/19		94	%	80 - 120
B528825	KH2	Matrix Spike [CVQ853-03]	Dissolved Aluminum (Al)	2024/09/20		98	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/20		98	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Cobalt (Co)	2024/09/20		95	%	80 - 120
			Dissolved Copper (Cu)	2024/09/20		96	%	80 - 120
			Dissolved Lead (Pb)	2024/09/20		96	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/20		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/20		105	%	80 - 120
			Dissolved Selenium (Se)	2024/09/20		98	%	80 - 120
			Dissolved Silver (Ag)	2024/09/20		97	%	80 - 120
			Dissolved Arsenic (As)	2024/09/20		102	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/20		95	%	80 - 120
			Dissolved Tin (Sn)	2024/09/20		101	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/20		101	%	80 - 120
			Dissolved Uranium (U)	2024/09/20		95	%	80 - 120
			Dissolved Vanadium (V)	2024/09/20		98	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/20		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/20		92	%	80 - 120
B529465	JAB	Matrix Spike [CVQ853-03]	Dissolved Iron (Fe)	2024/09/20		100	%	80 - 120
			Dissolved Lithium (Li)	2024/09/20		90	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/20		97	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/20		97	%	80 - 120
			Dissolved Potassium (K)	2024/09/20		97	%	80 - 120
			Dissolved Sodium (Na)	2024/09/20		91	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/20		88	%	80 - 120
			Dissolved Sulphur (S)	2024/09/20		NC	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/20		100	%	80 - 120
			Dissolved Barium (Ba)	2024/09/20		99	%	80 - 120
			Dissolved Silicon (Si)	2024/09/20		93	%	80 - 120
			Dissolved Boron (B)	2024/09/20		96	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/20		94	%	80 - 120
B529810	KHU	Matrix Spike [CVQ854-08]	Dissolved Mercury (Hg)	2024/09/20		102	%	80 - 120
B525087	RRA	LCS	Oil and grease	2024/09/18		91	%	70 - 130
B525265	RRA	LCS	Total Petroleum Hydrocarbon	2024/09/18		92	%	70 - 130
B526223	AFI	LCS	Total Ammonia (N)	2024/09/18		102	%	80 - 120
B526408	DSX	LCS	Turbidity	2024/09/18		99	%	80 - 120
B526631	LYV	LCS	Total Sulphide	2024/09/18		102	%	80 - 120
B526866	WPK	LCS	1,4-Difluorobenzene (sur.)	2024/09/21		92	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		104	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		100	%	50 - 140
			Benzene	2024/09/21		99	%	60 - 130
			Toluene	2024/09/21		100	%	60 - 130
			Ethylbenzene	2024/09/21		106	%	60 - 130
			m & p-Xylene	2024/09/21		102	%	60 - 130
			o-Xylene	2024/09/21		103	%	60 - 130
			F1 (C6-C10)	2024/09/21		91	%	60 - 140
B527093	TOR	LCS	Chloride (Cl)	2024/09/18		102	%	80 - 120
			Sulphate (SO4)	2024/09/18		101	%	80 - 120
B527220	HE1	LCS	Total Dissolved Solids	2024/09/20		94	%	80 - 120
B527228	HE1	LCS	Total Suspended Solids	2024/09/19		96	%	80 - 120
B527350	YL7	LCS	Total Nitrogen (N)	2024/09/19		101	%	80 - 120
B527537	AP1	LCS	Chemical Oxygen Demand	2024/09/19		101	%	80 - 120
B527661	ISW	LCS	Nitrite (N)	2024/09/19		103	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/19		103	%	80 - 120
B527743	JYU	LCS	Total Organic Carbon (C)	2024/09/19		110	%	80 - 120

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B527857	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/19		100	%	80 - 120
B527871	AYE	LCS	pH	2024/09/19		100	%	97 - 103
B527873	AYE	LCS	Conductivity	2024/09/19		100	%	90 - 110
B527874	JYU	LCS	Dissolved Organic Carbon (C)	2024/09/19		109	%	80 - 120
B527878	YL7	LCS	Orthophosphate (P)	2024/09/19		101	%	80 - 120
B527995	DM	LCS	D10-ANTHRACENE (sur.)	2024/09/23		108	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		111	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		70	%	50 - 130
			Acenaphthene	2024/09/23		81	%	50 - 130
			Acenaphthylene	2024/09/23		84	%	50 - 130
			Acridine	2024/09/23		87	%	50 - 130
			Anthracene	2024/09/23		84	%	50 - 130
			Benzo(a)anthracene	2024/09/23		101	%	50 - 130
			Benzo(b&j)fluoranthene	2024/09/23		97	%	50 - 130
			Benzo(k)fluoranthene	2024/09/23		93	%	50 - 130
			Benzo(g,h,i)perylene	2024/09/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/09/23		98	%	50 - 130
			Benzo(a)pyrene	2024/09/23		99	%	50 - 130
			Benzo(e)pyrene	2024/09/23		86	%	50 - 130
			Chrysene	2024/09/23		95	%	50 - 130
			Dibenz(a,h)anthracene	2024/09/23		98	%	50 - 130
			Fluoranthene	2024/09/23		102	%	50 - 130
			Fluorene	2024/09/23		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/09/23		101	%	50 - 130
			2-Methylnaphthalene	2024/09/23		70	%	50 - 130
			Naphthalene	2024/09/23		61	%	50 - 130
			Phenanthrene	2024/09/23		86	%	50 - 130
			Perylene	2024/09/23		81	%	50 - 130
			Pyrene	2024/09/23		103	%	50 - 130
			Quinoline	2024/09/23		102	%	50 - 130
			C1-Naphthalene	2024/09/23		56	%	50 - 130
			C3-Naphthalene	2024/09/23		75	%	50 - 130
			C2-Naphthalene	2024/09/23		61	%	50 - 130
			C1-biphenyl	2024/09/23		51	%	50 - 130
			C1 phenanthrene/anthracene	2024/09/23		101	%	50 - 130
			C2 phenanthrene/anthracene	2024/09/23		102	%	50 - 130
			C1 fluoranthene/pyrene	2024/09/23		102	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/09/23		92	%	30 - 130
			1-Methylnaphthalene	2024/09/23		56	%	50 - 130
B528008	CHA	LCS	O-TERPHENYL (sur.)	2024/09/21		95	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21		89	%	60 - 140
B528119	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/20		103	%	80 - 120
B528171	AYE	LCS	pH	2024/09/20		100	%	97 - 103
B528173	AYE	LCS	Conductivity	2024/09/20		101	%	90 - 110
B528431	ISW	LCS	Nitrite (N)	2024/09/19		103	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/19		107	%	80 - 120
B528471	HAP	LCS	Chloride (Cl)	2024/09/19		101	%	80 - 120
			Sulphate (SO4)	2024/09/19		100	%	80 - 120
B528625	TOR	LCS	True Colour	2024/09/19		108	%	80 - 120
B528705	KHU	LCS	Total Mercury (Hg)	2024/09/20		96	%	80 - 120
B528825	KH2	LCS	Dissolved Aluminum (Al)	2024/09/20		103	%	80 - 120

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Chromium (Cr)	2024/09/20		100	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/20		99	%	80 - 120
			Dissolved Copper (Cu)	2024/09/20		100	%	80 - 120
			Dissolved Lead (Pb)	2024/09/20		99	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/20		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/20		101	%	80 - 120
			Dissolved Selenium (Se)	2024/09/20		100	%	80 - 120
			Dissolved Silver (Ag)	2024/09/20		97	%	80 - 120
			Dissolved Arsenic (As)	2024/09/20		101	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/20		97	%	80 - 120
			Dissolved Tin (Sn)	2024/09/20		97	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/20		100	%	80 - 120
			Dissolved Uranium (U)	2024/09/20		95	%	80 - 120
			Dissolved Vanadium (V)	2024/09/20		101	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/20		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/20		94	%	80 - 120
B529465	JAB	LCS	Dissolved Iron (Fe)	2024/09/20		101	%	80 - 120
			Dissolved Lithium (Li)	2024/09/20		92	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/20		98	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/20		97	%	80 - 120
			Dissolved Potassium (K)	2024/09/20		97	%	80 - 120
			Dissolved Sodium (Na)	2024/09/20		95	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/20		96	%	80 - 120
			Dissolved Sulphur (S)	2024/09/20		96	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/20		99	%	80 - 120
			Dissolved Barium (Ba)	2024/09/20		100	%	80 - 120
			Dissolved Silicon (Si)	2024/09/20		95	%	80 - 120
			Dissolved Boron (B)	2024/09/20		96	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/20		97	%	80 - 120
B529810	KHU	LCS	Dissolved Mercury (Hg)	2024/09/20		97	%	80 - 120
B532400	KH2	LCS	Dissolved Nickel (Ni)	2024/09/23		86	%	80 - 120
B532937	JAB	LCS	Total Aluminum (Al)	2024/09/23		100	%	80 - 120
			Total Chromium (Cr)	2024/09/23		106	%	80 - 120
			Total Cobalt (Co)	2024/09/23		108	%	80 - 120
			Total Copper (Cu)	2024/09/23		106	%	80 - 120
			Total Lead (Pb)	2024/09/23		111	%	80 - 120
			Total Antimony (Sb)	2024/09/23		112	%	80 - 120
			Total Molybdenum (Mo)	2024/09/23		109	%	80 - 120
			Total Nickel (Ni)	2024/09/23		104	%	80 - 120
			Total Selenium (Se)	2024/09/23		110	%	80 - 120
			Total Silver (Ag)	2024/09/23		106	%	80 - 120
			Total Arsenic (As)	2024/09/23		107	%	80 - 120
			Total Thallium (Tl)	2024/09/23		115	%	80 - 120
			Total Tin (Sn)	2024/09/23		106	%	80 - 120
			Total Titanium (Ti)	2024/09/23		102	%	80 - 120
			Total Uranium (U)	2024/09/23		108	%	80 - 120
			Total Vanadium (V)	2024/09/23		108	%	80 - 120
			Total Zinc (Zn)	2024/09/23		105	%	80 - 120
			Total Beryllium (Be)	2024/09/23		107	%	80 - 120
B532939	VSC	LCS	Total Iron (Fe)	2024/09/24		101	%	80 - 120
			Total Lithium (Li)	2024/09/24		95	%	80 - 120
			Total Magnesium (Mg)	2024/09/24		98	%	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
			Total Manganese (Mn)	2024/09/24		95	%	80 - 120
			Total Potassium (K)	2024/09/24		98	%	80 - 120
			Total Sodium (Na)	2024/09/24		97	%	80 - 120
			Total Strontium (Sr)	2024/09/24		94	%	80 - 120
			Total Sulphur (S)	2024/09/24		95	%	80 - 120
			Total Phosphorus (P)	2024/09/24		94	%	80 - 120
			Total Barium (Ba)	2024/09/24		98	%	80 - 120
			Total Silicon (Si)	2024/09/24		96	%	80 - 120
			Total Boron (B)	2024/09/24		98	%	80 - 120
			Total Calcium (Ca)	2024/09/24		97	%	80 - 120
B527350	YL7	SRM	Total Nitrogen (N)	2024/09/19		102	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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).

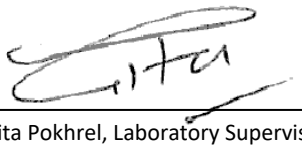
Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473367
Report Date: 2024/09/26

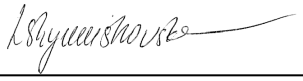
Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

VALIDATION SIGNATURE PAGE

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

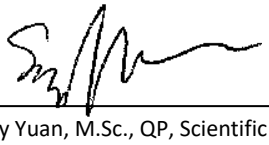


Gita Pokhrel, Laboratory Supervisor

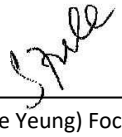


Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Rahul Suryawanshi, Senior Analyst



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



Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
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Automated Statchk

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VALIDATION SIGNATURE PAGE(CONT'D)

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

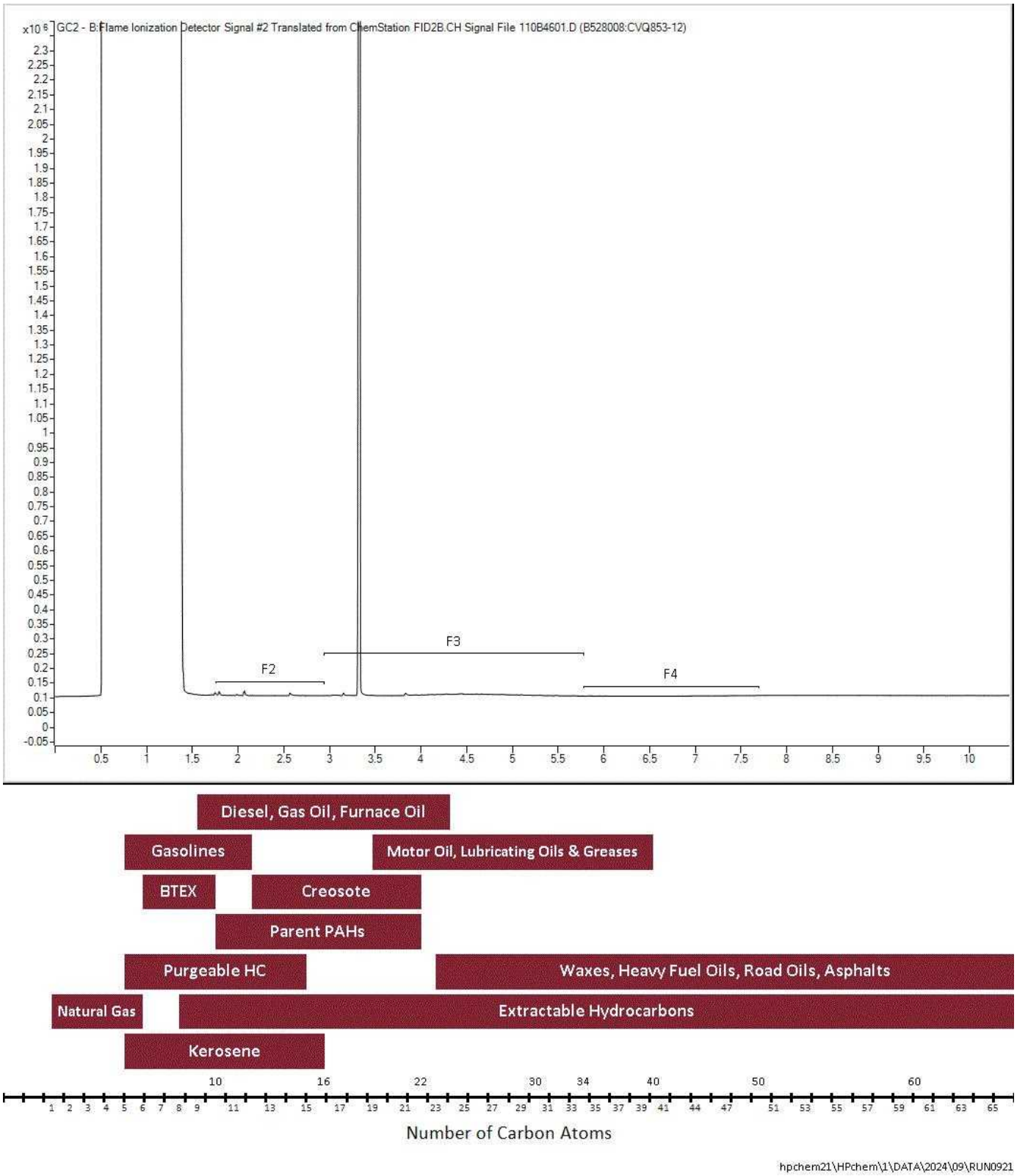
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473367
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ853

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



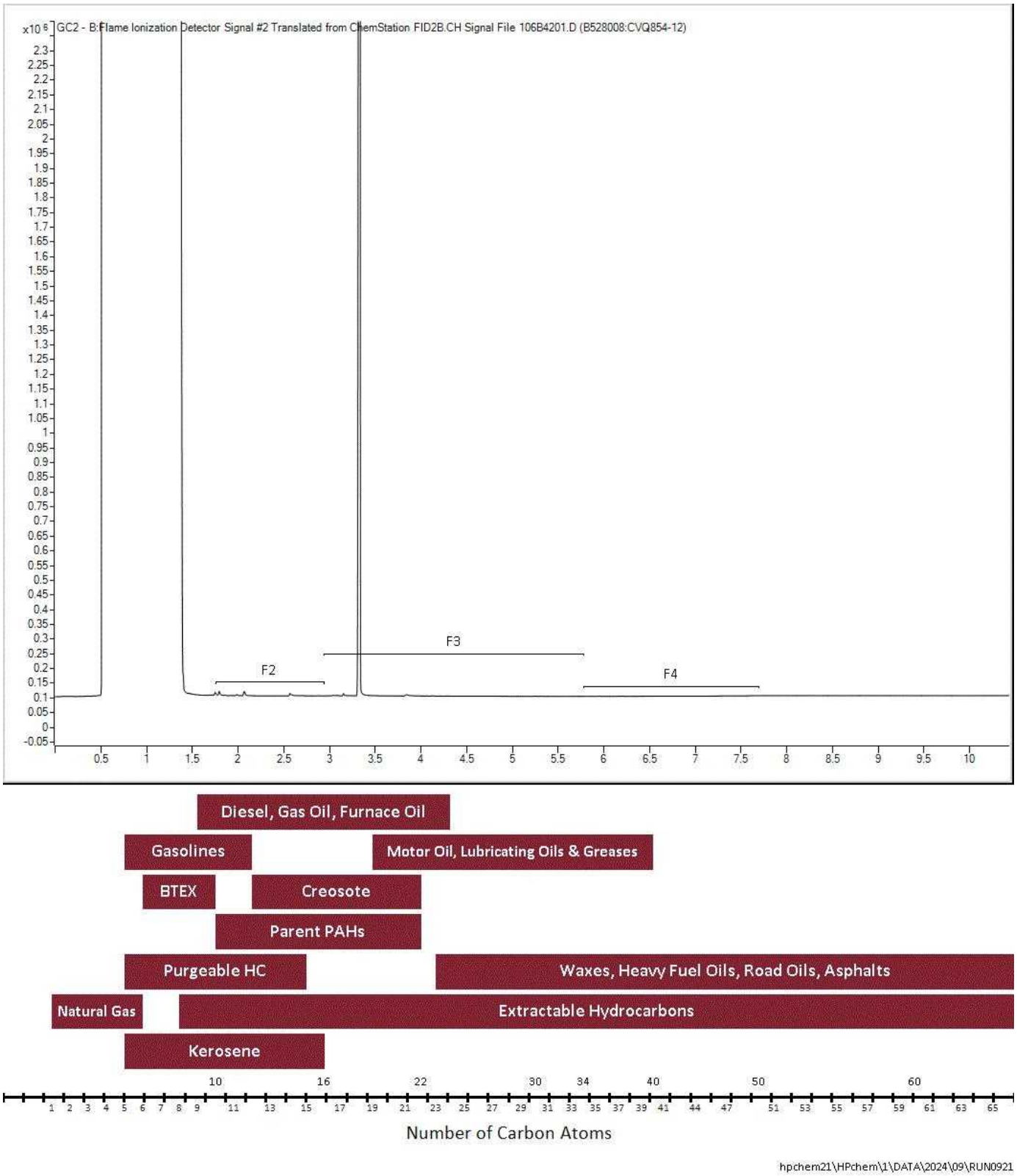
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C473367
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ854

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DUP1

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page _____ of _____

C of C # 292226

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: WORLEY
Contact Name: ALEX HAIGH	Contact Name: SAME
Address: 419 QUARRY PARK BLVD SE CALGARY AB T2C 3E7	Address: SAME
Email: alex.haigh@worley.com	Email: SAME
Ph: 587-897-6249	Ph: SAME
Sampler Name (Print): BENTLEY BLONDAL	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1	~~AEMP-DS-04~~		X			19	2024/09/13	10:46	X	
2	AEMP-DS-01		X			19	2024/09/13	12:10	X	
3	AEMP-DUP 1		X			19	2024/09/13	12:11	X	
4										
5										
6										
7										
8										
9										
10										

ANALYSIS REQUESTED

	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	TRUE Colour, TSS, TDS, Turbidity	Oil + Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (Total), TKN	Orthophosphate	Sulphur - Total + Dissolved	CCP	Alkylated PAH, TRH
1																									
2		X	X							X	X					X			X	X	X	X	X	X	X
3		X	X							X	X					X			X	X	X	X	X	X	X
4																									
5																									
6																									
7																									
8																									
9																									
10																									

MCAL-2024-09-1405

IOL SITE LOCATION: NORMAN WELLS, NT

IOL PROJECT # (if applicable):

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM:

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: EMAILS
CANADA-CHEMISTRY@WORLEY.COM
CACAL-IORDATATRACK@WORLEY.COM
STACY.GIBB@WORLEY.COM
IES A 2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #	1	2	3
SEAL PRESENT	✓		TEMP °C	6.3	4.7	3.6
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #	1	2	3
SEAL PRESENT			TEMP °C			
SEAL INTACT						
COOLING MEDIA PRESENT						

	YES	NO	COOLER ID #	1	2	3
SEAL PRESENT			TEMP °C			
SEAL INTACT						
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB #: C473367

SAMPLES
LABELED BY: JZL
VERIFIED BY: DTA

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	STACY GIBB	2024/09/15		1.	JH Lauzon	2024/09/17	1520
2.				2.			
3.				3.			

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292225

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562362
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473374
Received: 2024/09/17, 15:20

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	2		Auto Calc
Cadmium - low level CCME - Dissolved	2		Auto Calc
Cadmium - low level CCME (Total)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter	2	AB SOP-00016	SM 24 5220D m
True Colour	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (2)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S)	2		Auto Calc
Hardness	2		Auto Calc
Mercury (Dissolved) by CV (3)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (3)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (3)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance	2		Auto Calc
Ammonia-N (Total)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N)	2		Auto Calc
Oil and Grease by IR	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (4)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (5)	2		Auto Calc
pH @25°C (6)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (7)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292225

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562362
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473374
Received: 2024/09/17, 15:20

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	2	BBY WI-00033	Auto Calc
Nitrogen (Total)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (8)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR)	2	AB SOP-00061	SM 24 2540 D m
Turbidity	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) Silica gel clean up employed.
(3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(4) Alkylated PAH results are semiquantitative

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292225

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562362
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473374

Received: 2024/09/17, 15:20

(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(6) 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.
(7) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(8) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
26 Sep 2024 10:26:11

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473374
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CVQ884	CVQ885		
Sampling Date		2024/09/13 14:21	2024/09/13 10:46		
COC Number		292225	292225		
	UNITS	**AEMP-US-04**	**AEMP-DS-04**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B528008
Volatiles					
Benzene	mg/L	<0.00040	<0.00040	0.00040	B526866
Toluene	mg/L	<0.00040	<0.00040	0.00040	B526866
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B526866
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B526866
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B526866
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B525308
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B525308
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B526866
Extraction Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	92	91		B528008
Instrument Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	95	93		B526866
4-Bromofluorobenzene (sur.)	%	103	102		B526866
D4-1,2-Dichloroethane (sur.)	%	97	99		B526866
RDL = Reportable Detection Limit					

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TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CVQ884			CVQ885		
Sampling Date		2024/09/13 14:21			2024/09/13 10:46		
COC Number		292225			292225		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-DS-04**	**RDL**	**QC Batch**
Calculated Parameters							
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.25	0.020	B525380	<0.20	0.20	B525380
Nutrients							
Total Nitrogen (N)	mg/L	0.30	0.020	B527360	0.24 (1)	0.20	B527350

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473374
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVQ884		CVQ885			CVQ885		
Sampling Date		2024/09/13 14:21		2024/09/13 10:46			2024/09/13 10:46		
COC Number		292225		292225			292225		
	UNITS	**AEMP-US-04**	**QC Batch**	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**
Elements									
Total Cadmium (Cd)	mg/L	<0.000020	B525123	0.000066	0.000020	B525123			
Total Aluminum (Al)	mg/L	0.40	B532497	0.19	0.0030	B532243	0.21	0.0030	B532243
Total Antimony (Sb)	mg/L	<0.00060	B532497	<0.00060	0.00060	B532243	<0.00060	0.00060	B532243
Total Arsenic (As)	mg/L	0.00048	B532497	0.00044	0.00020	B532243	0.00059	0.00020	B532243
Total Barium (Ba)	mg/L	0.088	B532511	0.045	0.010	B532249	0.044	0.010	B532249
Total Beryllium (Be)	mg/L	<0.0010	B532497	<0.0010	0.0010	B532243	<0.0010	0.0010	B532243
Total Boron (B)	mg/L	0.037	B532511	<0.020	0.020	B532249	<0.020	0.020	B532249
Total Calcium (Ca)	mg/L	83	B532511	32	0.30	B532249	31	0.30	B532249
Total Chromium (Cr)	mg/L	<0.0010	B532497	<0.0010	0.0010	B532243	0.0028	0.0010	B532243
Total Cobalt (Co)	mg/L	0.00052	B532497	<0.00030	0.00030	B532243	<0.00030	0.00030	B532243
Total Copper (Cu)	mg/L	0.0010	B532497	0.0015	0.0010	B532243	0.0018	0.0010	B532243
Total Iron (Fe)	mg/L	0.75	B532511	0.12	0.060	B532249	0.14	0.060	B532249
Total Lead (Pb)	mg/L	0.00046	B532497	0.00027	0.00020	B532243	<0.00020	0.00020	B532243
Total Lithium (Li)	mg/L	<0.020	B532511	<0.020	0.020	B532249	<0.020	0.020	B532249
Total Magnesium (Mg)	mg/L	33	B532511	10	0.20	B532249	10	0.20	B532249
Total Manganese (Mn)	mg/L	0.028	B532511	0.0052	0.0040	B532249	0.0053	0.0040	B532249
Total Molybdenum (Mo)	mg/L	0.0021	B532497	0.0013	0.00020	B532243	0.0017	0.00020	B532243
Total Nickel (Ni)	mg/L	0.0018	B532497	0.0024 (1)	0.00050	B532243	0.0044 (2)	0.00050	B532243
Total Phosphorus (P)	mg/L	<0.10	B532511	<0.10	0.10	B532249	<0.10	0.10	B532249
Total Potassium (K)	mg/L	1.3	B532511	0.92	0.30	B532249	0.90	0.30	B532249
Total Selenium (Se)	mg/L	0.00024	B532497	0.00044	0.00020	B532243	0.00045	0.00020	B532243
Total Silicon (Si)	mg/L	2.5	B532511	1.4	0.50	B532249	1.4	0.50	B532249
Total Silver (Ag)	mg/L	<0.00010	B532497	<0.00010	0.00010	B532243	<0.00010	0.00010	B532243
Total Sodium (Na)	mg/L	32	B532511	8.0	0.50	B532249	7.9	0.50	B532249
Total Strontium (Sr)	mg/L	1.6	B532511	0.22	0.020	B532249	0.22	0.020	B532249
Total Sulphur (S)	mg/L	60	B532511	13	0.20	B532249	13	0.20	B532249
Total Thallium (Tl)	mg/L	<0.00020	B532497	<0.00020	0.00020	B532243	<0.00020	0.00020	B532243

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.
(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVQ884		CVQ885			CVQ885		
Sampling Date		2024/09/13 14:21		2024/09/13 10:46			2024/09/13 10:46		
COC Number		292225		292225			292225		
	UNITS	**AEMP-US-04**	**QC Batch**	**AEMP-DS-04**	**RDL**	**QC Batch**	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**
Total Tin (Sn)	mg/L	<0.0010	B532497	<0.0010	0.0010	B532243	<0.0010	0.0010	B532243
Total Titanium (Ti)	mg/L	0.0062	B532497	0.0035	0.0010	B532243	0.0031	0.0010	B532243
Total Uranium (U)	mg/L	0.0014	B532497	0.0010	0.00010	B532243	0.0012	0.00010	B532243
Total Vanadium (V)	mg/L	0.0010	B532497	<0.0010	0.0010	B532243	<0.0010	0.0010	B532243
Total Zinc (Zn)	mg/L	0.0034	B532497	0.0053	0.0030	B532243	0.0062	0.0030	B532243

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473374
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ884			CVQ884			CVQ885		
Sampling Date		2024/09/13 14:21			2024/09/13 14:21			2024/09/13 10:46		
COC Number		292225			292225			292225		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-04**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	380	0.50	B525286				120	0.50	B525286
Ion Balance (% Difference)	%	3.3	N/A	B525287				8.0	N/A	B525287
Nitrate (N)	mg/L	0.045	0.010	B525379				0.048	0.010	B525379
Nitrate (NO3)	mg/L	0.20	0.044	B525377				0.21	0.044	B525377
Nitrite (NO2)	mg/L	<0.033	0.033	B525377				<0.033	0.033	B525377
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B525372				<0.0020	0.0020	B525372
Demand Parameters										
Chemical Oxygen Demand	mg/L	<10 (1)	10	B529579				21	10	B529579
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B525238				0.000029	0.000020	B525238
Misc. Inorganics										
Conductivity	uS/cm	800	2.0	B527873				290	2.0	B528173
Dissolved Organic Carbon (C)	mg/L	2.5	0.50	B527874	2.4	0.50	B527874	3.6	0.50	B527874
pH	pH	7.91	N/A	B527871				7.46	N/A	B528171
Total Organic Carbon (C)	mg/L	1.9	0.50	B527743				3.0	0.50	B527743
Total Dissolved Solids	mg/L	500	10	B527220				160	10	B527220
Total Suspended Solids	mg/L	30	1.0	B527228				2.1	1.0	B527228
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B527857				<1.0	1.0	B528119
Alkalinity (Total as CaCO3)	mg/L	190	1.0	B527857				100	1.0	B528119
Bicarbonate (HCO3)	mg/L	230	1.0	B527857				120	1.0	B528119
Carbonate (CO3)	mg/L	<1.0	1.0	B527857				<1.0	1.0	B528119
Hydroxide (OH)	mg/L	<1.0	1.0	B527857				<1.0	1.0	B528119
Total Sulphide	mg/L	<0.0018	0.0018	B525746				<0.0018	0.0018	B525746
Chloride (Cl)	mg/L	39	1.0	B527093				8.8	1.0	B527692
Sulphate (SO4)	mg/L	170	5.0	B527093				44	1.0	B527692
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B526223				<0.015	0.015	B526181

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473374
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ884			CVQ884			CVQ885		
Sampling Date		2024/09/13 14:21			2024/09/13 14:21			2024/09/13 10:46		
COC Number		292225			292225			292225		
	UNITS	**AEMP-US-04**	**RDL**	**QC Batch**	**AEMP-US-04 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-04**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B527878				<0.0030	0.0030	B527878
Nitrite (N)	mg/L	<0.010	0.010	B527661	<0.010	0.010	B527661	<0.010	0.010	B528431
Nitrate plus Nitrite (N)	mg/L	0.045	0.010	B527661	0.053	0.010	B527661	0.048	0.010	B528431
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B525087				<2.0	2.0	B525087
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B525265				<2.0	2.0	B525265
Physical Properties										
True Colour	PtCo units	3.5	2.0	B528625				6.6	2.0	B528625
Physical Properties										
Turbidity	NTU	2.0	0.10	B526408				2.6	0.10	B526408

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CVQ885		
Sampling Date		2024/09/13 10:46		
COC Number		292225		
	UNITS	**AEMP-DS-04 Lab-Dup**	**RDL**	**QC Batch**
Misc. Organics				
Oil and grease	mg/L	<2.0	2.0	B525087
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B525265

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ884	CVQ885		
Sampling Date		2024/09/13 14:21	2024/09/13 10:46		
COC Number		292225	292225		
	UNITS	**AEMP-US-04**	**AEMP-DS-04**	**RDL**	**QC Batch**
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B525383
Acenaphthene	ug/L	<0.10	<0.10	0.10	B527995
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B527995
Acridine	ug/L	<0.040	<0.040	0.040	B527995
Anthracene	ug/L	<0.010	<0.010	0.010	B527995
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B527995
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B527995
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B527995
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B527995
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B527995
Fluoranthene	ug/L	<0.010	<0.010	0.010	B527995
Fluorene	ug/L	<0.050	<0.050	0.050	B527995
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B527995
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B527995
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B527995
Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
Phenanthrene	ug/L	<0.050	<0.050	0.050	B527995
Perylene	ug/L	<0.050	<0.050	0.050	B527995
Pyrene	ug/L	<0.020	<0.020	0.020	B527995
Quinoline	ug/L	<0.20	<0.20	0.20	B527995
Retene	ug/L	<0.050	<0.050	0.050	B527995
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B527995
Biphenyl	ug/L	<0.020	<0.020	0.020	B527995
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B527995
RDL = Reportable Detection Limit					

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ884	CVQ885		
Sampling Date		2024/09/13 14:21	2024/09/13 10:46		
COC Number		292225	292225		
	UNITS	**AEMP-US-04**	**AEMP-DS-04**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B527995
C1-fluorene	ug/L	<0.050	<0.050	0.050	B527995
C2-fluorene	ug/L	<0.050	<0.050	0.050	B527995
C3-fluorene	ug/L	0.078	<0.050	0.050	B527995
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C2-dibenzothiophene	ug/L	0.021	<0.020	0.020	B527995
C3-dibenzothiophene	ug/L	0.021	<0.020	0.020	B527995
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B527995
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B527995
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B527995
C3 phenanthrene/anthracene	ug/L	0.072	<0.050	0.050	B527995
C4 phenanthrene/anthracene	ug/L	0.066	<0.050	0.050	B527995
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B527995
C2 fluoranthene/pyrene	ug/L	0.040	<0.020	0.020	B527995
C3 fluoranthene/pyrene	ug/L	0.081	<0.020	0.020	B527995
C4 fluoranthene/pyrene	ug/L	0.041	<0.020	0.020	B527995
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
C2 benzo(a)anthracene/chrysene	ug/L	0.019	<0.0085	0.0085	B527995
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B527995
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B527995
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B527995
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B527995
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B527995
Extraction Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	116	113		B527995
D8-ACENAPHTHYLENE (sur.)	%	98	99		B527995
D8-NAPHTHALENE (sur.)	%	86	85		B527995
TERPHENYL-D14 (sur.)	%	127	118		B527995
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CVQ884	CVQ885		
Sampling Date		2024/09/13 14:21	2024/09/13 10:46		
COC Number		292225	292225		
	UNITS	**AEMP-US-04**	**AEMP-DS-04**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B528696
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B528690
RDL = Reportable Detection Limit					

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVQ884	CVQ885		
Sampling Date		2024/09/13 14:21	2024/09/13 10:46		
COC Number		292225	292225		
	UNITS	**AEMP-US-04**	**AEMP-DS-04**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	<0.0030	0.051	0.0030	B526843
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B526843
Dissolved Arsenic (As)	mg/L	<0.00020	0.00021	0.00020	B526843
Dissolved Barium (Ba)	mg/L	0.080	0.038	0.010	B526664
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B526843
Dissolved Boron (B)	mg/L	0.039	<0.020	0.020	B526664
Dissolved Calcium (Ca)	mg/L	93	31	0.30	B526664
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B526843
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B526843
Dissolved Copper (Cu)	mg/L	<0.0010	<0.0010	0.0010	B526843
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	0.060	B526664
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B526843
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	B526664
Dissolved Magnesium (Mg)	mg/L	36	10	0.20	B526664
Dissolved Manganese (Mn)	mg/L	0.0057	<0.0040	0.0040	B526664
Dissolved Molybdenum (Mo)	mg/L	0.0017	0.00091	0.00020	B526843
Dissolved Nickel (Ni)	mg/L	<0.00050	0.0012	0.00050	B526843
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B526664
Dissolved Potassium (K)	mg/L	1.3	0.79	0.30	B526664
Dissolved Selenium (Se)	mg/L	<0.00020	0.00025	0.00020	B526843
Dissolved Silicon (Si)	mg/L	2.2	1.2	0.50	B526664
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B526843
Dissolved Sodium (Na)	mg/L	34	7.3	0.50	B526664
Dissolved Strontium (Sr)	mg/L	1.6	0.19	0.020	B526664
Dissolved Sulphur (S)	mg/L	63	14	0.20	B526664
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B526843
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B526843
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B526843
Dissolved Uranium (U)	mg/L	0.0011	0.00070	0.00010	B526843
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B526843
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	0.0030	B526843
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C473374
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ884
Sample ID: AEMP-US-04
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B527857	N/A	2024/09/19	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B526866	N/A	2024/09/21	Wonjeong Park
F1-BTEX	CALC/MS	B525308	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B525238	N/A	2024/09/19	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B525123	N/A	2024/09/24	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B527093	N/A	2024/09/18	Tyler Orr
COD by Colorimeter	M/PROB	B529579	N/A	2024/09/20	Dafne Strozake Maximo
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen
Conductivity @25C	COND	B527873	N/A	2024/09/19	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B525372	N/A	2024/09/18	Automated Statchk
Hardness	CALC	B525286	N/A	2024/09/20	Automated Statchk
Mercury (Dissolved) by CV	CV	B528696	2024/09/19	2024/09/20	Kevin Hung
Mercury (Total) by CV	CV	B528690	2024/09/19	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B526664	N/A	2024/09/19	Sarah Dolan
Elements by ICP - Total	ICPA	B532511	2024/09/23	2024/09/23	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B526843	N/A	2024/09/18	Kevin Huang
Elements by ICPMS - Total	ICPM	B532497	2024/09/23	2024/09/23	Kevin Huang
Ion Balance	CALC	B525287	N/A	2024/09/20	Automated Statchk
Ammonia-N (Total)	KONE	B526223	N/A	2024/09/18	Adam Fishleigh
Nitrate and Nitrite	CALC	B525377	N/A	2024/09/19	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B527661	N/A	2024/09/19	Isabelle White
Nitrate (as N)	CALC	B525379	2024/09/19	2024/09/19	Automated Statchk
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B525383	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B527871	N/A	2024/09/19	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Total Sulphide	SPEC	B525746	N/A	2024/09/18	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B527220	2024/09/19	2024/09/20	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B525380	N/A	2024/09/19	Automated Statchk
Nitrogen (Total)	AC/COL	B527360	2024/09/19	2024/09/19	Yan Lin
Carbon (Total Organic)	TECH	B527743	N/A	2024/09/19	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B527228	2024/09/19	2024/09/19	Haydee Estilong
Turbidity	TURB	B526408	N/A	2024/09/18	Dafne Strozake Maximo

Bureau Veritas ID: CVQ884 Dup
Sample ID: AEMP-US-04
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen

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Bureau Veritas Job #: C473374
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ884 Dup
Sample ID: AEMP-US-04
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B527661	N/A	2024/09/19	Isabelle White

Bureau Veritas ID: CVQ885
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B528119	N/A	2024/09/20	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B526866	N/A	2024/09/21	Wonjeong Park
F1-BTEX	CALC/MS	B525308	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B525238	N/A	2024/09/19	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B525123	N/A	2024/09/23	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B527692	N/A	2024/09/19	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B529579	N/A	2024/09/20	Dafne Strozake Maximo
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen
Conductivity @25C	COND	B528173	N/A	2024/09/20	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B525372	N/A	2024/09/18	Automated Statchk
Hardness	CALC	B525286	N/A	2024/09/20	Automated Statchk
Mercury (Dissolved) by CV	CV	B528696	2024/09/19	2024/09/20	Kevin Hung
Mercury (Total) by CV	CV	B528690	2024/09/19	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B526664	N/A	2024/09/19	Sarah Dolan
Elements by ICP - Total	ICPA	B532249	2024/09/23	2024/09/23	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B526843	N/A	2024/09/18	Kevin Huang
Elements by ICPMS - Total	ICPM	B532243	2024/09/23	2024/09/23	Kevin Huang
Ion Balance	CALC	B525287	N/A	2024/09/20	Automated Statchk
Ammonia-N (Total)	KONE	B526181	N/A	2024/09/18	Adam Fishleigh
Nitrate and Nitrite	CALC	B525377	N/A	2024/09/20	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B528431	N/A	2024/09/19	Isabelle White
Nitrate (as N)	CALC	B525379	2024/09/20	2024/09/20	Automated Statchk
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B525383	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B528171	N/A	2024/09/20	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Total Sulphide	SPEC	B525746	N/A	2024/09/18	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B527220	2024/09/19	2024/09/20	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B525380	N/A	2024/09/20	Automated Statchk
Nitrogen (Total)	AC/COL	B527350	2024/09/19	2024/09/19	Yan Lin
Carbon (Total Organic)	TECH	B527743	N/A	2024/09/19	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B527228	2024/09/19	2024/09/19	Haydee Estilong
Turbidity	TURB	B526408	N/A	2024/09/18	Dafne Strozake Maximo

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Bureau Veritas Job #: C473374
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ885 Dup
Sample ID: AEMP-DS-04
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Elements by ICP - Total	ICPA	B532249	2024/09/23	2024/09/23	Vincy Scaria
Elements by ICPMS - Total	ICPM	B532243	2024/09/23	2024/09/23	Kevin Huang
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

GENERAL COMMENTS

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

Package 1	7.3°C

Note: C of C information incomplete; Relinquished time was not filled out. Alex Haigh was notified via email and the lab proceeded with the analysis.

Sample CVQ884 [AEMP-US-04] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for True Colour.

Sample CVQ885 [AEMP-DS-04] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Results relate only to the items tested.

DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CVQ885	AEMP-DS-04	Water	ICPMSABL-T	ELE	Nickel (Ni)	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B525087	RRA	Method Blank	Oil and grease	2024/09/18	<2.0		mg/L	
B525265	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/09/18	<2.0		mg/L	
B525746	LYV	Method Blank	Total Sulphide	2024/09/18	<0.0018		mg/L	
B526181	AFI	Method Blank	Total Ammonia (N)	2024/09/18	<0.015		mg/L	
B526223	AFI	Method Blank	Total Ammonia (N)	2024/09/18	<0.015		mg/L	
B526408	DSX	Method Blank	Turbidity	2024/09/18	<0.10		NTU	
B526664	S1D	Method Blank	Dissolved Iron (Fe)	2024/09/19	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/19	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/19	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/19	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/19	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/19	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/19	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/19	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/19	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/19	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/19	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/19	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/19	<0.30		mg/L	
B526843	KH2	Method Blank	Dissolved Aluminum (Al)	2024/09/18	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/09/18	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/09/18	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/09/18	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/09/18	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/09/18	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/09/18	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/09/18	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/09/18	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/09/18	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/09/18	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/09/18	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/09/18	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/09/18	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/09/18	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/09/18	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/09/18	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/09/18	<0.0010		mg/L	
B526866	WPK	Method Blank	1,4-Difluorobenzene (sur.)	2024/09/21		93	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		99	%	50 - 140
			Benzene	2024/09/21	<0.00040		mg/L	
			Toluene	2024/09/21	<0.00040		mg/L	
			Ethylbenzene	2024/09/21	<0.00040		mg/L	
			m & p-Xylene	2024/09/21	<0.00080		mg/L	
			o-Xylene	2024/09/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/09/21	<0.10		mg/L	
B527093	TOR	Method Blank	Chloride (Cl)	2024/09/18	<1.0		mg/L	
			Sulphate (SO4)	2024/09/18	<1.0		mg/L	
B527220	HE1	Method Blank	Total Dissolved Solids	2024/09/20	<10		mg/L	
B527228	HE1	Method Blank	Total Suspended Solids	2024/09/19	<1.0		mg/L	
B527350	YL7	Method Blank	Total Nitrogen (N)	2024/09/19	<0.020		mg/L	
B527360	YL7	Method Blank	Total Nitrogen (N)	2024/09/19	<0.020		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B527661	ISW	Method Blank	Nitrite (N)	2024/09/19	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/19	<0.010		mg/L	
B527692	HAP	Method Blank	Chloride (Cl)	2024/09/19	<1.0		mg/L	
			Sulphate (SO4)	2024/09/19	<1.0		mg/L	
B527743	JYU	Method Blank	Total Organic Carbon (C)	2024/09/19	<0.50		mg/L	
B527857	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/19	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/19	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/19	<1.0		mg/L	
			Carbonate (CO3)	2024/09/19	<1.0		mg/L	
			Hydroxide (OH)	2024/09/19	<1.0		mg/L	
B527873	AYE	Method Blank	Conductivity	2024/09/19	<2.0		uS/cm	
B527874	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/09/19	<0.50		mg/L	
B527878	YL7	Method Blank	Orthophosphate (P)	2024/09/19	<0.0030		mg/L	
B527995	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/09/23		103	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		107	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		86	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		68	%	50 - 130
			Acenaphthene	2024/09/23	<0.10		ug/L	
			Acenaphthylene	2024/09/23	<0.10		ug/L	
			Acridine	2024/09/23	<0.040		ug/L	
			Anthracene	2024/09/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/09/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/09/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/09/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/09/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/09/23	<0.050		ug/L	
			Chrysene	2024/09/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/09/23	<0.0075		ug/L	
			Fluoranthene	2024/09/23	<0.010		ug/L	
			Fluorene	2024/09/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/09/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/09/23	<0.0085		ug/L	
			2-Methylnaphthalene	2024/09/23	<0.10		ug/L	
			Naphthalene	2024/09/23	<0.10		ug/L	
			Phenanthrene	2024/09/23	<0.050		ug/L	
			Perylene	2024/09/23	<0.050		ug/L	
			Pyrene	2024/09/23	<0.020		ug/L	
			Quinoline	2024/09/23	<0.20		ug/L	
			Retene	2024/09/23	<0.050		ug/L	
			C1-Naphthalene	2024/09/23	<0.10		ug/L	
			C3-Naphthalene	2024/09/23	<0.10		ug/L	
			C4-Naphthalene	2024/09/23	<0.10		ug/L	
			C2-Naphthalene	2024/09/23	<0.10		ug/L	
			Biphenyl	2024/09/23	<0.020		ug/L	
			C1-biphenyl	2024/09/23	<0.020		ug/L	
			C2-biphenyl	2024/09/23	<0.020		ug/L	
			C1-fluorene	2024/09/23	<0.050		ug/L	
			C2-fluorene	2024/09/23	<0.050		ug/L	
			C3-fluorene	2024/09/23	<0.050		ug/L	
			Dibenzothiophene	2024/09/23	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C1-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/09/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/09/23	<0.10		ug/L	
B528008	CHA	Method Blank	O-TERPHENYL (sur.)	2024/09/21		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21	<0.10		mg/L	
B528119	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/20	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/20	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/20	<1.0		mg/L	
			Carbonate (CO3)	2024/09/20	<1.0		mg/L	
			Hydroxide (OH)	2024/09/20	<1.0		mg/L	
B528173	AYE	Method Blank	Conductivity	2024/09/20	<2.0		uS/cm	
B528431	ISW	Method Blank	Nitrite (N)	2024/09/19	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/19	<0.010		mg/L	
B528625	TOR	Method Blank	True Colour	2024/09/19	<2.0		PtCo units	
B528690	KHU	Method Blank	Total Mercury (Hg)	2024/09/20	<0.0019		ug/L	
B528696	KHU	Method Blank	Dissolved Mercury (Hg)	2024/09/20	<0.0019		ug/L	
B529579	DSX	Method Blank	Chemical Oxygen Demand	2024/09/20	<10		mg/L	
B532243	KH2	Method Blank	Total Aluminum (Al)	2024/09/23	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/23	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/23	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/23	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/23	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/23	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/23	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/23	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/23	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/23	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/23	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/23	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/23	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/23	<0.0010		mg/L	
			Total Uranium (U)	2024/09/23	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/23	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/23	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/23	<0.0010		mg/L	

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B532249	VSC	Method Blank	Total Iron (Fe)	2024/09/23	<0.060		mg/L	
			Total Lithium (Li)	2024/09/23	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/23	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/23	<0.0040		mg/L	
			Total Potassium (K)	2024/09/23	<0.30		mg/L	
			Total Sodium (Na)	2024/09/23	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/23	<0.020		mg/L	
			Total Sulphur (S)	2024/09/23	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/23	<0.10		mg/L	
			Total Barium (Ba)	2024/09/23	<0.010		mg/L	
			Total Silicon (Si)	2024/09/23	<0.50		mg/L	
			Total Boron (B)	2024/09/23	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/23	<0.30		mg/L	
B532497	KH2	Method Blank	Total Aluminum (Al)	2024/09/23	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/23	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/23	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/23	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/23	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/23	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/23	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/23	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/23	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/23	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/23	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/23	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/23	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/23	<0.0010		mg/L	
			Total Uranium (U)	2024/09/23	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/23	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/23	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/23	<0.0010		mg/L	
B532511	VSC	Method Blank	Total Iron (Fe)	2024/09/23	<0.060		mg/L	
			Total Lithium (Li)	2024/09/23	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/23	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/23	<0.0040		mg/L	
			Total Potassium (K)	2024/09/23	<0.30		mg/L	
			Total Sodium (Na)	2024/09/23	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/23	<0.020		mg/L	
			Total Sulphur (S)	2024/09/23	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/23	<0.10		mg/L	
			Total Barium (Ba)	2024/09/23	<0.010		mg/L	
			Total Silicon (Si)	2024/09/23	<0.50		mg/L	
			Total Boron (B)	2024/09/23	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/23	<0.30		mg/L	
B527661	ISW	RPD [CVQ884-02]	Nitrite (N)	2024/09/19	NC		%	20
			Nitrate plus Nitrite (N)	2024/09/19	15		%	20
B527874	JYU	RPD [CVQ884-05]	Dissolved Organic Carbon (C)	2024/09/19	2.5		%	20
B525087	RRA	RPD [CVQ885-14]	Oil and grease	2024/09/18	NC		%	30
B525265	RRA	RPD [CVQ885-14]	Total Petroleum Hydrocarbon	2024/09/18	NC		%	30
B532243	KH2	RPD [CVQ885-04]	Total Aluminum (Al)	2024/09/23	12		%	20
			Total Chromium (Cr)	2024/09/23	NC		%	20
			Total Cobalt (Co)	2024/09/23	NC		%	20

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			Total Copper (Cu)	2024/09/23	13		%	20
			Total Lead (Pb)	2024/09/23	NC		%	20
			Total Antimony (Sb)	2024/09/23	NC		%	20
			Total Molybdenum (Mo)	2024/09/23	NC		%	20
			Total Nickel (Ni)	2024/09/23	57 (1)		%	20
			Total Selenium (Se)	2024/09/23	2.5		%	20
			Total Silver (Ag)	2024/09/23	NC		%	20
			Total Arsenic (As)	2024/09/23	NC		%	20
			Total Thallium (Tl)	2024/09/23	NC		%	20
			Total Tin (Sn)	2024/09/23	NC		%	20
			Total Titanium (Ti)	2024/09/23	11		%	20
			Total Uranium (U)	2024/09/23	15		%	20
			Total Vanadium (V)	2024/09/23	NC		%	20
			Total Zinc (Zn)	2024/09/23	16		%	20
			Total Beryllium (Be)	2024/09/23	NC		%	20
B532249	VSC	RPD [CVQ885-04]	Total Iron (Fe)	2024/09/23	15		%	20
			Total Lithium (Li)	2024/09/23	NC		%	20
			Total Magnesium (Mg)	2024/09/23	0.96		%	20
			Total Manganese (Mn)	2024/09/23	1.9		%	20
			Total Potassium (K)	2024/09/23	3.1		%	20
			Total Sodium (Na)	2024/09/23	0.64		%	20
			Total Strontium (Sr)	2024/09/23	0.51		%	20
			Total Sulphur (S)	2024/09/23	1.1		%	20
			Total Phosphorus (P)	2024/09/23	NC		%	20
			Total Barium (Ba)	2024/09/23	0.29		%	20
			Total Silicon (Si)	2024/09/23	1.9		%	20
			Total Boron (B)	2024/09/23	NC		%	20
			Total Calcium (Ca)	2024/09/23	1.2		%	20
B525087	RRA	Matrix Spike [CVQ884-14]	Oil and grease	2024/09/18		91	%	70 - 130
B525265	RRA	Matrix Spike [CVQ884-14]	Total Petroleum Hydrocarbon	2024/09/18		91	%	70 - 130
B527661	ISW	Matrix Spike [CVQ884-02]	Nitrite (N)	2024/09/19		100	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/19		119	%	80 - 120
B527874	JYU	Matrix Spike [CVQ884-05]	Dissolved Organic Carbon (C)	2024/09/19		106	%	75 - 125
B525087	RRA	LCS	Oil and grease	2024/09/18		91	%	70 - 130
B525265	RRA	LCS	Total Petroleum Hydrocarbon	2024/09/18		92	%	70 - 130
B525746	LYV	LCS	Total Sulphide	2024/09/18		102	%	80 - 120
B526181	AFI	LCS	Total Ammonia (N)	2024/09/18		102	%	80 - 120
B526223	AFI	LCS	Total Ammonia (N)	2024/09/18		102	%	80 - 120
B526408	DSX	LCS	Turbidity	2024/09/18		99	%	80 - 120
B526664	S1D	LCS	Dissolved Iron (Fe)	2024/09/19		99	%	80 - 120
			Dissolved Lithium (Li)	2024/09/19		100	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/19		104	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/19		99	%	80 - 120
			Dissolved Potassium (K)	2024/09/19		104	%	80 - 120
			Dissolved Sodium (Na)	2024/09/19		99	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/19		92	%	80 - 120
			Dissolved Sulphur (S)	2024/09/19		98	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/19		97	%	80 - 120
			Dissolved Barium (Ba)	2024/09/19		96	%	80 - 120
			Dissolved Silicon (Si)	2024/09/19		98	%	80 - 120
			Dissolved Boron (B)	2024/09/19		93	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/19		102	%	80 - 120

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B526843	KH2	LCS	Dissolved Aluminum (Al)	2024/09/18		102	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/18		99	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/18		99	%	80 - 120
			Dissolved Copper (Cu)	2024/09/18		100	%	80 - 120
			Dissolved Lead (Pb)	2024/09/18		98	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/18		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/18		102	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/18		99	%	80 - 120
			Dissolved Selenium (Se)	2024/09/18		107	%	80 - 120
			Dissolved Silver (Ag)	2024/09/18		99	%	80 - 120
			Dissolved Arsenic (As)	2024/09/18		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/18		95	%	80 - 120
			Dissolved Tin (Sn)	2024/09/18		102	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/18		99	%	80 - 120
			Dissolved Uranium (U)	2024/09/18		100	%	80 - 120
			Dissolved Vanadium (V)	2024/09/18		101	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/18		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/18		96	%	80 - 120
B526866	WPK	LCS	1,4-Difluorobenzene (sur.)	2024/09/21		92	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		104	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		100	%	50 - 140
			Benzene	2024/09/21		99	%	60 - 130
			Toluene	2024/09/21		100	%	60 - 130
			Ethylbenzene	2024/09/21		106	%	60 - 130
			m & p-Xylene	2024/09/21		102	%	60 - 130
			o-Xylene	2024/09/21		103	%	60 - 130
			F1 (C6-C10)	2024/09/21		91	%	60 - 140
B527093	TOR	LCS	Chloride (Cl)	2024/09/18		102	%	80 - 120
			Sulphate (SO4)	2024/09/18		101	%	80 - 120
B527220	HE1	LCS	Total Dissolved Solids	2024/09/20		94	%	80 - 120
B527228	HE1	LCS	Total Suspended Solids	2024/09/19		96	%	80 - 120
B527350	YL7	LCS	Total Nitrogen (N)	2024/09/19		101	%	80 - 120
B527360	YL7	LCS	Total Nitrogen (N)	2024/09/19		104	%	80 - 120
B527661	ISW	LCS	Nitrite (N)	2024/09/19		103	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/19		103	%	80 - 120
B527692	HAP	LCS	Chloride (Cl)	2024/09/19		95	%	80 - 120
			Sulphate (SO4)	2024/09/19		98	%	80 - 120
B527743	JYU	LCS	Total Organic Carbon (C)	2024/09/19		110	%	80 - 120
B527857	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/19		100	%	80 - 120
B527871	AYE	LCS	pH	2024/09/19		100	%	97 - 103
B527873	AYE	LCS	Conductivity	2024/09/19		100	%	90 - 110
B527874	JYU	LCS	Dissolved Organic Carbon (C)	2024/09/19		109	%	80 - 120
B527878	YL7	LCS	Orthophosphate (P)	2024/09/19		101	%	80 - 120
B527995	DM	LCS	D10-ANTHRACENE (sur.)	2024/09/23		108	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		111	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		70	%	50 - 130
			Acenaphthene	2024/09/23		81	%	50 - 130
			Acenaphthylene	2024/09/23		84	%	50 - 130
			Acridine	2024/09/23		87	%	50 - 130
			Anthracene	2024/09/23		84	%	50 - 130
			Benzo(a)anthracene	2024/09/23		101	%	50 - 130

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			Benzo(b&j)fluoranthene	2024/09/23		97	%	50 - 130
			Benzo(k)fluoranthene	2024/09/23		93	%	50 - 130
			Benzo(g,h,i)perylene	2024/09/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/09/23		98	%	50 - 130
			Benzo(a)pyrene	2024/09/23		99	%	50 - 130
			Benzo(e)pyrene	2024/09/23		86	%	50 - 130
			Chrysene	2024/09/23		95	%	50 - 130
			Dibenz(a,h)anthracene	2024/09/23		98	%	50 - 130
			Fluoranthene	2024/09/23		102	%	50 - 130
			Fluorene	2024/09/23		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/09/23		101	%	50 - 130
			2-Methylnaphthalene	2024/09/23		70	%	50 - 130
			Naphthalene	2024/09/23		61	%	50 - 130
			Phenanthrene	2024/09/23		86	%	50 - 130
			Perylene	2024/09/23		81	%	50 - 130
			Pyrene	2024/09/23		103	%	50 - 130
			Quinoline	2024/09/23		102	%	50 - 130
			C1-Naphthalene	2024/09/23		56	%	50 - 130
			C3-Naphthalene	2024/09/23		75	%	50 - 130
			C2-Naphthalene	2024/09/23		61	%	50 - 130
			C1-biphenyl	2024/09/23		51	%	50 - 130
			C1 phenanthrene/anthracene	2024/09/23		101	%	50 - 130
			C2 phenanthrene/anthracene	2024/09/23		102	%	50 - 130
			C1 fluoranthene/pyrene	2024/09/23		102	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/09/23		92	%	30 - 130
			1-Methylnaphthalene	2024/09/23		56	%	50 - 130
B528008	CHA	LCS	O-TERPHENYL (sur.)	2024/09/21		95	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21		89	%	60 - 140
B528119	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/20		103	%	80 - 120
B528171	AYE	LCS	pH	2024/09/20		100	%	97 - 103
B528173	AYE	LCS	Conductivity	2024/09/20		101	%	90 - 110
B528431	ISW	LCS	Nitrite (N)	2024/09/19		103	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/19		107	%	80 - 120
B528625	TOR	LCS	True Colour	2024/09/19		108	%	80 - 120
B528690	KHU	LCS	Total Mercury (Hg)	2024/09/20		99	%	80 - 120
B528696	KHU	LCS	Dissolved Mercury (Hg)	2024/09/20		99	%	80 - 120
B529579	DSX	LCS	Chemical Oxygen Demand	2024/09/20		100	%	80 - 120
B532243	KH2	LCS	Total Aluminum (Al)	2024/09/23		107	%	80 - 120
			Total Chromium (Cr)	2024/09/23		107	%	80 - 120
			Total Cobalt (Co)	2024/09/23		109	%	80 - 120
			Total Copper (Cu)	2024/09/23		109	%	80 - 120
			Total Lead (Pb)	2024/09/23		109	%	80 - 120
			Total Antimony (Sb)	2024/09/23		104	%	80 - 120
			Total Molybdenum (Mo)	2024/09/23		104	%	80 - 120
			Total Nickel (Ni)	2024/09/23		108	%	80 - 120
			Total Selenium (Se)	2024/09/23		105	%	80 - 120
			Total Silver (Ag)	2024/09/23		106	%	80 - 120
			Total Arsenic (As)	2024/09/23		107	%	80 - 120
			Total Thallium (Tl)	2024/09/23		112	%	80 - 120
			Total Tin (Sn)	2024/09/23		102	%	80 - 120
			Total Titanium (Ti)	2024/09/23		102	%	80 - 120
			Total Uranium (U)	2024/09/23		109	%	80 - 120

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Vanadium (V)	2024/09/23		107	%	80 - 120
			Total Zinc (Zn)	2024/09/23		106	%	80 - 120
			Total Beryllium (Be)	2024/09/23		104	%	80 - 120
B532249	VSC	LCS	Total Iron (Fe)	2024/09/23		99	%	80 - 120
			Total Lithium (Li)	2024/09/23		100	%	80 - 120
			Total Magnesium (Mg)	2024/09/23		103	%	80 - 120
			Total Manganese (Mn)	2024/09/23		96	%	80 - 120
			Total Potassium (K)	2024/09/23		98	%	80 - 120
			Total Sodium (Na)	2024/09/23		97	%	80 - 120
			Total Strontium (Sr)	2024/09/23		100	%	80 - 120
			Total Sulphur (S)	2024/09/23		95	%	80 - 120
			Total Phosphorus (P)	2024/09/23		96	%	80 - 120
			Total Barium (Ba)	2024/09/23		105	%	80 - 120
			Total Silicon (Si)	2024/09/23		93	%	80 - 120
			Total Boron (B)	2024/09/23		100	%	80 - 120
			Total Calcium (Ca)	2024/09/23		97	%	80 - 120
B532497	KH2	LCS	Total Aluminum (Al)	2024/09/23		112	%	80 - 120
			Total Chromium (Cr)	2024/09/23		112	%	80 - 120
			Total Cobalt (Co)	2024/09/23		113	%	80 - 120
			Total Copper (Cu)	2024/09/23		112	%	80 - 120
			Total Lead (Pb)	2024/09/23		110	%	80 - 120
			Total Antimony (Sb)	2024/09/23		108	%	80 - 120
			Total Molybdenum (Mo)	2024/09/23		115	%	80 - 120
			Total Nickel (Ni)	2024/09/23		111	%	80 - 120
			Total Selenium (Se)	2024/09/23		113	%	80 - 120
			Total Silver (Ag)	2024/09/23		111	%	80 - 120
			Total Arsenic (As)	2024/09/23		112	%	80 - 120
			Total Thallium (Tl)	2024/09/23		110	%	80 - 120
			Total Tin (Sn)	2024/09/23		112	%	80 - 120
			Total Titanium (Ti)	2024/09/23		111	%	80 - 120
			Total Uranium (U)	2024/09/23		112	%	80 - 120
			Total Vanadium (V)	2024/09/23		112	%	80 - 120
			Total Zinc (Zn)	2024/09/23		110	%	80 - 120
			Total Beryllium (Be)	2024/09/23		106	%	80 - 120
B532511	VSC	LCS	Total Iron (Fe)	2024/09/23		99	%	80 - 120
			Total Lithium (Li)	2024/09/23		99	%	80 - 120
			Total Magnesium (Mg)	2024/09/23		103	%	80 - 120
			Total Manganese (Mn)	2024/09/23		95	%	80 - 120
			Total Potassium (K)	2024/09/23		97	%	80 - 120
			Total Sodium (Na)	2024/09/23		96	%	80 - 120
			Total Strontium (Sr)	2024/09/23		98	%	80 - 120
			Total Sulphur (S)	2024/09/23		95	%	80 - 120
			Total Phosphorus (P)	2024/09/23		96	%	80 - 120
			Total Barium (Ba)	2024/09/23		103	%	80 - 120
			Total Silicon (Si)	2024/09/23		92	%	80 - 120
			Total Boron (B)	2024/09/23		99	%	80 - 120
			Total Calcium (Ca)	2024/09/23		96	%	80 - 120
B527350	YL7	SRM	Total Nitrogen (N)	2024/09/19		102	%	80 - 120

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B527360	YL7	SRM	Total Nitrogen (N)	2024/09/19		106	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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.

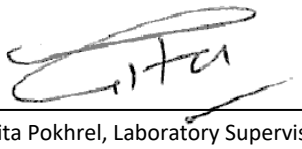
Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473374
Report Date: 2024/09/26

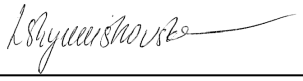
Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

VALIDATION SIGNATURE PAGE

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

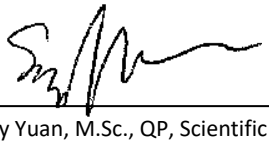


Gita Pokhrel, Laboratory Supervisor

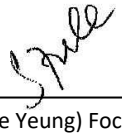


Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Rahul Suryawanshi, Senior Analyst



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



Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VALIDATION SIGNATURE PAGE(CONT'D)

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

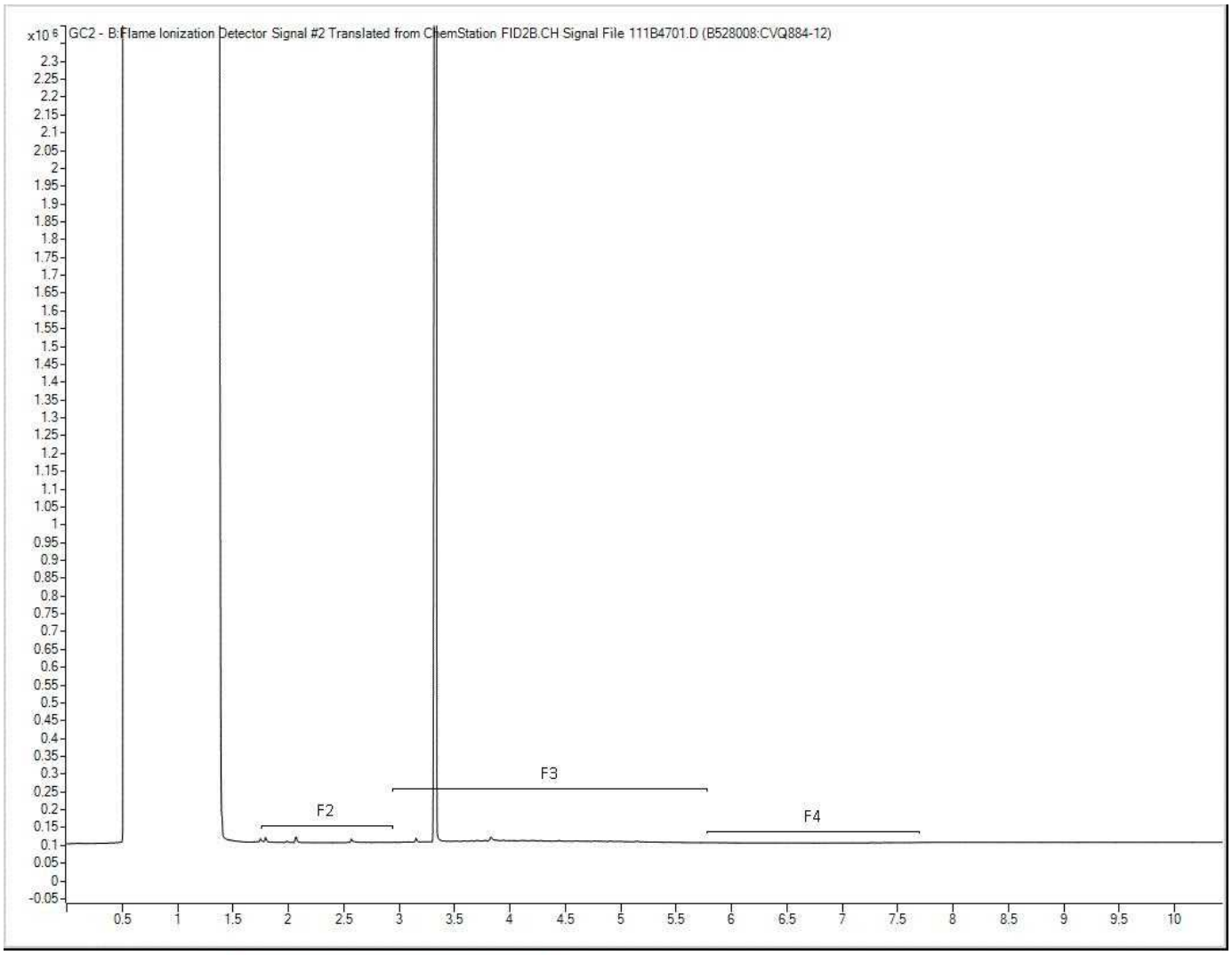
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

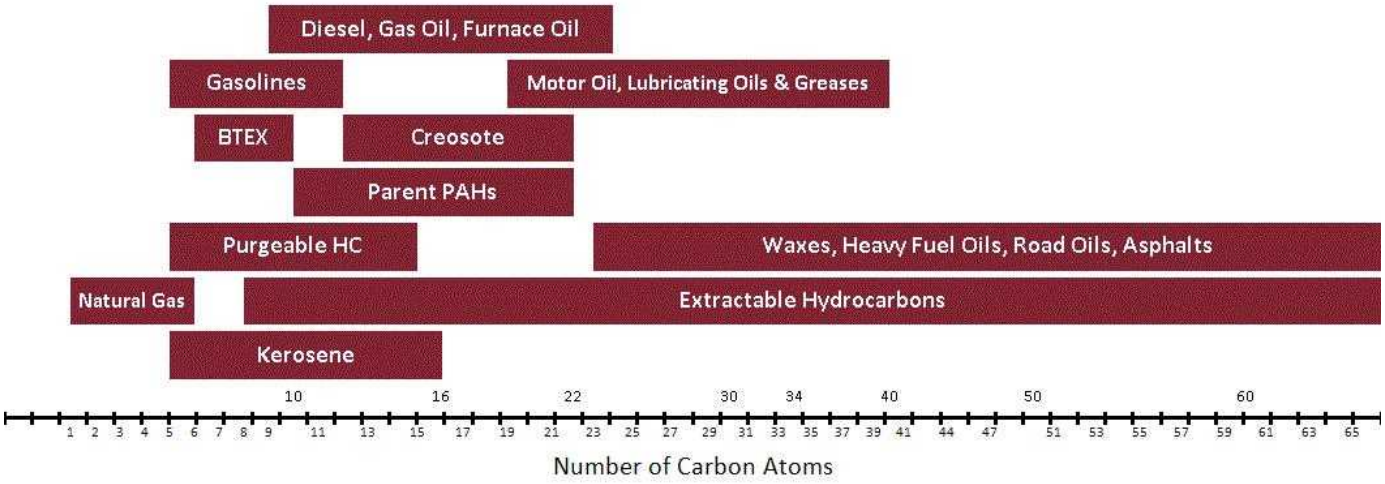
Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473374
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ884

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-04

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram





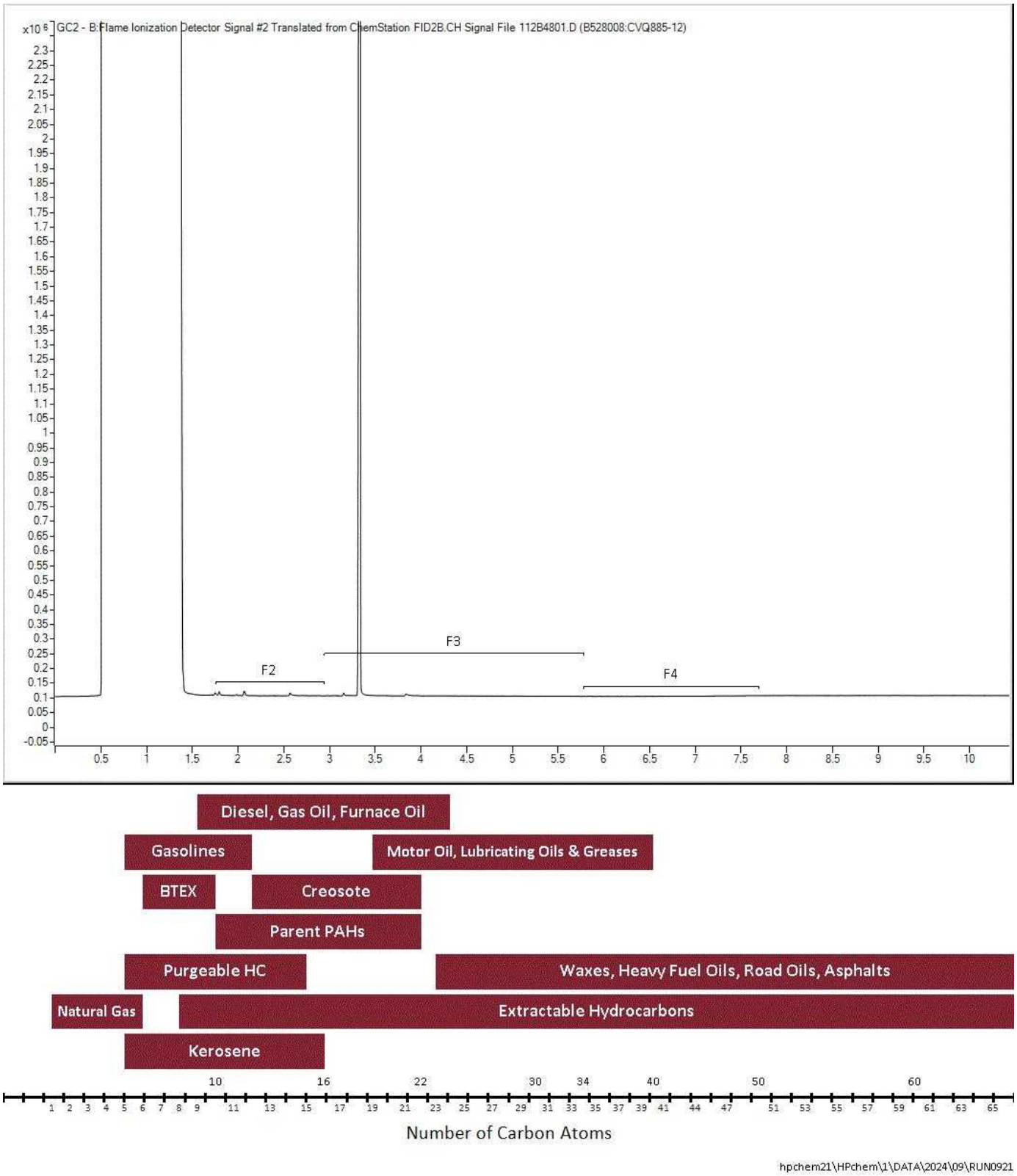
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C473374
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ885

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-04

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

C of C # 292225

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Same as invoice
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: Same as invoice
Email: Alex.Haigh@worley.com	Email: Same as invoice
Ph: 587-897-6249	Ph: Same as invoice
Sampler Name (Print): Stacy Gibb	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	SAMPLING: TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Color, TSS, TDS, Turbidity	Oil & Grease	TOC, DOC, Sulphide	Nitrate, Nitrite, Total Ammonia, TKN	Orthophosphate	Sulphur - Total & Dissolved	COD	Alkylated PAH, TPH
1	AEMP-US-04		X			18	2024/09/13	14:21	X			X	X							X	X					X			X	X	X	X	X	X	X
2	AEMP-DS-04		X			18	2024/09/13	10:46	X			X	X							X	X					X			X	X	X	X	X	X	X
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

MCAL-2024-09-1404

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: Email canada.chemistry@worley.com cacal_IORdatatrack@worley.com stacy.Gibb@worley.com
IES A2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	9.4	6.3	6.2
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C			
SEAL INTACT				1	2	3
COOLING MEDIA PRESENT						

LAB USE ONLY
MAXXAM JOB # C473374

SAMPLES
LABELED BY: JZL
VERIFIED BY: DAC

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	STACY GIBB	2024/09/15		1.	Jeff Lemen	2024/09/17	1520
2.				2.			
3.				3.			

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292868

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562364
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473383
Received: 2024/09/17, 15:20

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	3	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	3	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	3		Auto Calc
Cadmium - low level CCME - Dissolved	3		Auto Calc
Cadmium - low level CCME (Total)	3		Auto Calc
Chloride/Sulphate by Auto Colourimetry	3	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter	3	AB SOP-00016	SM 24 5220D m
True Colour	3	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1)	3	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C	3	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (2)	3	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S)	3		Auto Calc
Hardness	3		Auto Calc
Mercury (Dissolved) by CV (3)	3	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	3	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (3)	3	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total	3	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (3)	3	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total	3	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance	3		Auto Calc
Ammonia-N (Total)	3	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite	3		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water	3	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N)	3		Auto Calc
Oil and Grease by IR	3	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (4)	3	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (5)	3		Auto Calc
pH @25°C (6)	3	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (7)	3	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide	3	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292868

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562364
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473383
Received: 2024/09/17, 15:20

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue)	3	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	3	BBY WI-00033	Auto Calc
Nitrogen (Total)	3	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (8)	3	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease)	3	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR)	3	AB SOP-00061	SM 24 2540 D m
Turbidity	3	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) Silica gel clean up employed.
(3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(4) Alkylated PAH results are semiquantitative

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200
Your C.O.C. #: 292868

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562364
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C473383

Received: 2024/09/17, 15:20

(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(6) 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.
(7) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(8) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
26 Sep 2024 10:26:50

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C473383
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CVQ911	CVQ912	CVQ913			CVQ913		
Sampling Date		2024/09/12 11:23	2024/09/12 16:00	2024/09/13 10:03			2024/09/13 10:03		
COC Number		292868	292868	292868			292868		
	UNITS	**AEMP-US-03**	**AEMP-US-05**	**AEMP-DS-02**	**RDL**	**QC Batch**	**AEMP-DS-02 Lab-Dup**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	0.10	B528008	<0.10	0.10	B528008
Volatiles									
Benzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B525721			
Toluene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B525721			
Ethylbenzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B525721			
m & p-Xylene	mg/L	<0.00080	<0.00080	<0.00080	0.00080	B525721			
o-Xylene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B525721			
Xylenes (Total)	mg/L	<0.00089	<0.00089	<0.00089	0.00089	B525308			
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	<0.10	0.10	B525308			
F1 (C6-C10)	mg/L	<0.10	<0.10	<0.10	0.10	B525721			
Extraction Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	89	90	90		B528008	90		B528008
Instrument Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	96	97	99		B525721			
4-Bromofluorobenzene (sur.)	%	102	102	98		B525721			
D4-1,2-Dichloroethane (sur.)	%	94	94	96		B525721			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C473383
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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CVQ911			CVQ912			CVQ913		
Sampling Date		2024/09/12 11:23			2024/09/12 16:00			2024/09/13 10:03		
COC Number		292868			292868			292868		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**	**AEMP-US-05**	**RDL**	**QC Batch**	**AEMP-DS-02**	**RDL**	**QC Batch**
Calculated Parameters										
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.97	0.20	B519963	0.14	0.020	B525380	<0.20	0.20	B525380
Nutrients										
Total Nitrogen (N)	mg/L	1.0 (1)	0.20	B527360	0.18	0.020	B527360	0.22 (1)	0.20	B527350

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVQ911		CVQ912		CVQ913		
Sampling Date		2024/09/12 11:23		2024/09/12 16:00		2024/09/13 10:03		
COC Number		292868		292868		292868		
	UNITS	**AEMP-US-03**	**QC Batch**	**AEMP-US-05**	**QC Batch**	**AEMP-DS-02**	**RDL**	**QC Batch**
Elements								
Total Cadmium (Cd)	mg/L	0.000037	B525123	<0.000020	B525123	0.000044	0.000020	B525123
Total Aluminum (Al)	mg/L	0.12	B532243	0.018	B532937	0.16	0.0030	B532497
Total Antimony (Sb)	mg/L	<0.00060	B532243	<0.00060	B532937	<0.00060	0.00060	B532497
Total Arsenic (As)	mg/L	0.00038	B532243	0.00023	B532937	0.00044	0.00020	B532497
Total Barium (Ba)	mg/L	0.045	B532249	0.080	B532939	0.048	0.010	B532511
Total Beryllium (Be)	mg/L	<0.0010	B532243	<0.0010	B532937	<0.0010	0.0010	B532497
Total Boron (B)	mg/L	<0.020	B532249	0.036	B532939	<0.020	0.020	B532511
Total Calcium (Ca)	mg/L	32	B532249	86	B532939	35	0.30	B532511
Total Chromium (Cr)	mg/L	<0.0010	B532243	<0.0010	B532937	<0.0010	0.0010	B532497
Total Cobalt (Co)	mg/L	<0.00030	B532243	<0.00030	B532937	<0.00030	0.00030	B532497
Total Copper (Cu)	mg/L	0.0011	B532243	<0.0010	B532937	0.0013	0.0010	B532497
Total Iron (Fe)	mg/L	0.11	B532249	0.070	B532939	0.16	0.060	B532511
Total Lead (Pb)	mg/L	<0.00020	B532243	0.00082	B532937	<0.00020	0.00020	B532497
Total Lithium (Li)	mg/L	<0.020	B532249	<0.020	B532939	<0.020	0.020	B532511
Total Magnesium (Mg)	mg/L	11	B532249	33	B532939	12	0.20	B532511
Total Manganese (Mn)	mg/L	0.0050	B532249	0.0063	B532939	0.0066	0.0040	B532511
Total Molybdenum (Mo)	mg/L	0.00094	B532243	0.0020	B532937	0.0011	0.00020	B532497
Total Nickel (Ni)	mg/L	0.0016	B532243	0.00061	B532937	0.0019	0.00050	B532497
Total Phosphorus (P)	mg/L	<0.10	B532249	<0.10	B532939	<0.10	0.10	B532511
Total Potassium (K)	mg/L	0.94	B532249	1.2	B532939	0.96	0.30	B532511
Total Selenium (Se)	mg/L	0.00033	B532243	<0.00020	B532937	0.00032	0.00020	B532497
Total Silicon (Si)	mg/L	1.4	B532249	2.2	B532939	1.5	0.50	B532511
Total Silver (Ag)	mg/L	<0.00010	B532243	<0.00010	B532937	<0.00010	0.00010	B532497
Total Sodium (Na)	mg/L	8.2	B532249	33	B532939	9.4	0.50	B532511
Total Strontium (Sr)	mg/L	0.22	B532249	1.6	B532939	0.30	0.020	B532511
Total Sulphur (S)	mg/L	14	B532249	59	B532939	16	0.20	B532511
Total Thallium (Tl)	mg/L	<0.00020	B532243	<0.00020	B532937	<0.00020	0.00020	B532497
Total Tin (Sn)	mg/L	<0.0010	B532243	<0.0010	B532937	<0.0010	0.0010	B532497
Total Titanium (Ti)	mg/L	0.0016	B532243	0.0016	B532937	0.0020	0.0010	B532497
Total Uranium (U)	mg/L	0.00077	B532243	0.0012	B532937	0.00087	0.00010	B532497
Total Vanadium (V)	mg/L	<0.0010	B532243	<0.0010	B532937	<0.0010	0.0010	B532497
RDL = Reportable Detection Limit								

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVQ911		CVQ912		CVQ913		
Sampling Date		2024/09/12 11:23		2024/09/12 16:00		2024/09/13 10:03		
COC Number		292868		292868		292868		
	UNITS	**AEMP-US-03**	**QC Batch**	**AEMP-US-05**	**QC Batch**	**AEMP-DS-02**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	<0.0030	B532243	<0.0030	B532937	0.0051	0.0030	B532497
RDL = Reportable Detection Limit								

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ911			CVQ911			CVQ912		
Sampling Date		2024/09/12 11:23			2024/09/12 11:23			2024/09/12 16:00		
COC Number		292868			292868			292868		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**	**AEMP-US-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-05**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	140	0.50	B525286				370	0.50	B525286
Ion Balance (% Difference)	%	0.013	N/A	B525287				1.0	N/A	B525287
Nitrate (N)	mg/L	0.047	0.010	B525134				0.041	0.010	B525379
Nitrate (NO3)	mg/L	0.21	0.044	B525377				0.18	0.044	B525377
Nitrite (NO2)	mg/L	<0.033	0.033	B525377				<0.033	0.033	B525377
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B525372				<0.0020	0.0020	B525372
Demand Parameters										
Chemical Oxygen Demand	mg/L	65	10	B527537				<10 (1)	10	B527537
Elements										
Dissolved Cadmium (Cd)	mg/L	0.000021	0.000020	B525238				<0.000020	0.000020	B525238
Misc. Inorganics										
Conductivity	uS/cm	290	2.0	B528173				800	2.0	B528173
Dissolved Organic Carbon (C)	mg/L	2.7	0.50	B527874				2.2	0.50	B527874
pH	pH	7.29	N/A	B528171				8.28	N/A	B528171
Total Organic Carbon (C)	mg/L	3.1	0.50	B527743				2.0	0.50	B527743
Total Dissolved Solids	mg/L	160 (2)	10	B532964				400	10	B525425
Total Suspended Solids	mg/L	1.1	1.0	B525417	1.2	1.0	B525417	<1.0	1.0	B525417
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B528119				<1.0	1.0	B528119
Alkalinity (Total as CaCO3)	mg/L	100	1.0	B528119				200	1.0	B528119
Bicarbonate (HCO3)	mg/L	120	1.0	B528119				250	1.0	B528119
Carbonate (CO3)	mg/L	<1.0	1.0	B528119				<1.0	1.0	B528119
Hydroxide (OH)	mg/L	<1.0	1.0	B528119				<1.0	1.0	B528119
Total Sulphide	mg/L	<0.0018	0.0018	B525743				<0.0018	0.0018	B525743
Chloride (Cl)	mg/L	8.7	1.0	B527692				36	1.0	B527692
Sulphate (SO4)	mg/L	43	1.0	B527692				180	5.0	B527692

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.
(2) Sample was originally processed within hold time. Data quality required investigation. Re-analysis was completed past recommended hold time.

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ911			CVQ911			CVQ912		
Sampling Date		2024/09/12 11:23			2024/09/12 11:23			2024/09/12 16:00		
COC Number		292868			292868			292868		
	UNITS	**AEMP-US-03**	**RDL**	**QC Batch**	**AEMP-US-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-05**	**RDL**	**QC Batch**
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B526223				<0.015	0.015	B526181
Orthophosphate (P)	mg/L	<0.0030	0.0030	B527878				<0.0030	0.0030	B527878
Nitrite (N)	mg/L	<0.010	0.010	B528431				<0.010	0.010	B528431
Nitrate plus Nitrite (N)	mg/L	0.047	0.010	B528431				0.041	0.010	B528431
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B525087				<2.0	2.0	B525087
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B525265				<2.0	2.0	B525265
Physical Properties										
True Colour	PtCo units	<2.0	2.0	B528625				9.5	2.0	B528625
Physical Properties										
Turbidity	NTU	5.2	0.10	B526759				1.2	0.10	B526759

RDL = Reportable Detection Limit
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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ913			CVQ913		
Sampling Date		2024/09/13 10:03			2024/09/13 10:03		
COC Number		292868			292868		
	UNITS	**AEMP-DS-02**	**RDL**	**QC Batch**	**AEMP-DS-02 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L	140	0.50	B525286			
Ion Balance (% Difference)	%	1.2	N/A	B525287			
Nitrate (N)	mg/L	0.049	0.010	B525379			
Nitrate (NO3)	mg/L	0.22	0.044	B525377			
Nitrite (NO2)	mg/L	<0.033	0.033	B525377			
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B525372			
Demand Parameters							
Chemical Oxygen Demand	mg/L	11	10	B527537			
Elements							
Dissolved Cadmium (Cd)	mg/L	0.000033	0.000020	B525238			
Misc. Inorganics							
Conductivity	uS/cm	310	2.0	B532542			
Dissolved Organic Carbon (C)	mg/L	3.0	0.50	B527874			
pH	pH	7.09	N/A	B532539			
Total Organic Carbon (C)	mg/L	2.7	0.50	B527743			
Total Dissolved Solids	mg/L	180	10	B527220			
Total Suspended Solids	mg/L	1.0	1.0	B527228			
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B532535			
Alkalinity (Total as CaCO3)	mg/L	95	1.0	B532535			
Bicarbonate (HCO3)	mg/L	120	1.0	B532535			
Carbonate (CO3)	mg/L	<1.0	1.0	B532535			
Hydroxide (OH)	mg/L	<1.0	1.0	B532535			
Total Sulphide	mg/L	<0.0018	0.0018	B525743			
Chloride (Cl)	mg/L	10	1.0	B527692			
Sulphate (SO4)	mg/L	51	1.0	B527692			
Nutrients							
Total Ammonia (N)	mg/L	<0.015	0.015	B526223			
Orthophosphate (P)	mg/L	<0.0030	0.0030	B527878			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Site Location: NORMAN WELLS, NT
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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVQ913			CVQ913		
Sampling Date		2024/09/13 10:03			2024/09/13 10:03		
COC Number		292868			292868		
	UNITS	**AEMP-DS-02**	**RDL**	**QC Batch**	**AEMP-DS-02 Lab-Dup**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B528431			
Nitrate plus Nitrite (N)	mg/L	0.049	0.010	B528431			
Misc. Organics							
Oil and grease	mg/L	<2.0	2.0	B525087			
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B525265			
Physical Properties							
True Colour	PtCo units	13	2.0	B528625			
Physical Properties							
Turbidity	NTU	3.2	0.10	B526759	3.0	0.10	B526759

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ911	CVQ912	CVQ913		
Sampling Date		2024/09/12 11:23	2024/09/12 16:00	2024/09/13 10:03		
COC Number		292868	292868	292868		
	UNITS	**AEMP-US-03**	**AEMP-US-05**	**AEMP-DS-02**	**RDL**	**QC Batch**
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	<0.000010	0.000010	B519729
Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Acridine	ug/L	<0.040	<0.040	<0.040	0.040	B527995
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	B527995
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
Fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	B527995
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Perylene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
Quinoline	ug/L	<0.20	<0.20	<0.20	0.20	B527995
Retene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C1-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
C3-Naphthalene	ug/L	<0.10	<0.10	0.20	0.10	B527995
C4-Naphthalene	ug/L	<0.10	<0.10	0.24	0.10	B527995
C2-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
RDL = Reportable Detection Limit						

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ911	CVQ912	CVQ913		
Sampling Date		2024/09/12 11:23	2024/09/12 16:00	2024/09/13 10:03		
COC Number		292868	292868	292868		
	UNITS	**AEMP-US-03**	**AEMP-US-05**	**AEMP-DS-02**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C2-fluorene	ug/L	<0.050	<0.050	0.17	0.050	B527995
C3-fluorene	ug/L	<0.050	<0.050	0.45	0.050	B527995
Dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.14	0.020	B527995
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.40	0.020	B527995
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.24	0.020	B527995
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.062	0.020	B527995
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.20	0.050	B527995
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.44	0.050	B527995
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.59	0.050	B527995
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.25	0.050	B527995
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.042	0.020	B527995
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.12	0.020	B527995
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.26	0.020	B527995
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.15	0.020	B527995
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.036	0.0085	B527995
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.13	0.0085	B527995
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.052	0.0085	B527995
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.014	0.0075	B527995
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.015	0.0075	B527995
C1-Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
1-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Extraction Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	109	109	120		B527995
D8-ACENAPHTHYLENE (sur.)	%	92	95	104		B527995
D8-NAPHTHALENE (sur.)	%	81	85	87		B527995
TERPHENYL-D14 (sur.)	%	114	112	129		B527995
RDL = Reportable Detection Limit						

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ913		
Sampling Date		2024/09/13 10:03		
COC Number		292868		
	UNITS	**AEMP-DS-02 Lab-Dup**	**RDL**	**QC Batch**
Polycyclic Aromatics				
Acenaphthene	ug/L	<0.10	0.10	B527995
Acenaphthylene	ug/L	<0.10	0.10	B527995
Acridine	ug/L	<0.040	0.040	B527995
Anthracene	ug/L	<0.010	0.010	B527995
Benzo(a)anthracene	ug/L	<0.0085	0.0085	B527995
Benzo(b&j)fluoranthene	ug/L	<0.0085	0.0085	B527995
Benzo(k)fluoranthene	ug/L	<0.0085	0.0085	B527995
Benzo(g,h,i)perylene	ug/L	<0.0085	0.0085	B527995
Benzo(c)phenanthrene	ug/L	<0.050	0.050	B527995
Benzo(a)pyrene	ug/L	<0.0075	0.0075	B527995
Benzo(e)pyrene	ug/L	<0.050	0.050	B527995
Chrysene	ug/L	<0.0085	0.0085	B527995
Dibenz(a,h)anthracene	ug/L	<0.0075	0.0075	B527995
Fluoranthene	ug/L	<0.010	0.010	B527995
Fluorene	ug/L	<0.050	0.050	B527995
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	0.0085	B527995
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	0.0085	B527995
2-Methylnaphthalene	ug/L	<0.10	0.10	B527995
Naphthalene	ug/L	<0.10	0.10	B527995
Phenanthrene	ug/L	<0.050	0.050	B527995
Perylene	ug/L	<0.050	0.050	B527995
Pyrene	ug/L	<0.020	0.020	B527995
Quinoline	ug/L	<0.20	0.20	B527995
Retene	ug/L	<0.050	0.050	B527995
C1-Naphthalene	ug/L	<0.10	0.10	B527995
C3-Naphthalene	ug/L	<0.10	0.10	B527995
C4-Naphthalene	ug/L	<0.10	0.10	B527995
C2-Naphthalene	ug/L	<0.10	0.10	B527995
Biphenyl	ug/L	<0.020	0.020	B527995
C1-biphenyl	ug/L	<0.020	0.020	B527995

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ913		
Sampling Date		2024/09/13 10:03		
COC Number		292868		
	UNITS	**AEMP-DS-02 Lab-Dup**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	0.020	B527995
C1-fluorene	ug/L	<0.050	0.050	B527995
C2-fluorene	ug/L	<0.050 (1)	0.050	B527995
C3-fluorene	ug/L	0.10 (1)	0.050	B527995
Dibenzothiophene	ug/L	<0.020	0.020	B527995
C1-dibenzothiophene	ug/L	<0.020 (1)	0.020	B527995
C2-dibenzothiophene	ug/L	0.041 (1)	0.020	B527995
C3-dibenzothiophene	ug/L	0.040 (1)	0.020	B527995
C4-dibenzothiophene	ug/L	<0.020 (1)	0.020	B527995
C1 phenanthrene/anthracene	ug/L	0.082 (1)	0.050	B527995
C2 phenanthrene/anthracene	ug/L	0.086 (1)	0.050	B527995
C3 phenanthrene/anthracene	ug/L	0.076 (1)	0.050	B527995
C4 phenanthrene/anthracene	ug/L	<0.050 (1)	0.050	B527995
C1 fluoranthene/pyrene	ug/L	<0.020	0.020	B527995
C2 fluoranthene/pyrene	ug/L	<0.020 (1)	0.020	B527995
C3 fluoranthene/pyrene	ug/L	<0.020 (1)	0.020	B527995
C4 fluoranthene/pyrene	ug/L	<0.020 (1)	0.020	B527995
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085 (1)	0.0085	B527995
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085 (1)	0.0085	B527995
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085 (1)	0.0085	B527995
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	0.0085	B527995
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	0.0075	B527995
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	0.0075	B527995
C1-Acenaphthene	ug/L	<0.10	0.10	B527995
1-Methylnaphthalene	ug/L	<0.10	0.10	B527995
Extraction Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	103		B527995
D8-ACENAPHTHYLENE (sur.)	%	89		B527995

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

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

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVQ913		
Sampling Date		2024/09/13 10:03		
COC Number		292868		
	UNITS	**AEMP-DS-02 Lab-Dup**	**RDL**	**QC Batch**
D8-NAPHTHALENE (sur.)	%	77		B527995
TERPHENYL-D14 (sur.)	%	107		B527995

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CVQ911	CVQ912	CVQ913		
Sampling Date		2024/09/12 11:23	2024/09/12 16:00	2024/09/13 10:03		
COC Number		292868	292868	292868		
	UNITS	**AEMP-US-03**	**AEMP-US-05**	**AEMP-DS-02**	**RDL**	**QC Batch**
Elements						
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	B528696
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	B528690
RDL = Reportable Detection Limit						

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVQ911	CVQ912		CVQ913		
Sampling Date		2024/09/12 11:23	2024/09/12 16:00		2024/09/13 10:03		
COC Number		292868	292868		292868		
	UNITS	**AEMP-US-03**	**AEMP-US-05**	**QC Batch**	**AEMP-DS-02**	**RDL**	**QC Batch**
Elements							
Dissolved Aluminum (Al)	mg/L	0.039	<0.0030	B526843	0.058	0.0030	B526843
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	B526843	<0.00060	0.00060	B526843
Dissolved Arsenic (As)	mg/L	0.00024	<0.00020	B526843	0.00025	0.00020	B526843
Dissolved Barium (Ba)	mg/L	0.042	0.079	B526664	0.047	0.010	B533472
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	B526843	<0.0010	0.0010	B526843
Dissolved Boron (B)	mg/L	<0.020	0.033	B526664	<0.020	0.020	B533472
Dissolved Calcium (Ca)	mg/L	36	91	B526664	35	0.30	B533472
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	B526843	<0.0010	0.0010	B526843
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	B526843	<0.00030	0.00030	B526843
Dissolved Copper (Cu)	mg/L	0.0014	<0.0010	B526843	<0.0010	0.0010	B526843
Dissolved Iron (Fe)	mg/L	<0.060	<0.060	B526664	<0.060	0.060	B533472
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	B526843	0.00036	0.00020	B526843
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	B526664	<0.020	0.020	B533472
Dissolved Magnesium (Mg)	mg/L	12	36	B526664	12	0.20	B533472
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0053	B526664	<0.0040	0.0040	B533472
Dissolved Molybdenum (Mo)	mg/L	0.00096	0.0020	B526843	0.0012	0.00020	B526843
Dissolved Nickel (Ni)	mg/L	0.0011	<0.00050	B526843	0.0011	0.00050	B526843
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	B526664	<0.10	0.10	B533472
Dissolved Potassium (K)	mg/L	0.97	1.2	B526664	0.91	0.30	B533472
Dissolved Selenium (Se)	mg/L	0.00026	<0.00020	B526843	0.00030	0.00020	B526843
Dissolved Silicon (Si)	mg/L	1.4	2.2	B526664	1.2	0.50	B533472
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	B526843	<0.00010	0.00010	B526843
Dissolved Sodium (Na)	mg/L	8.6	33	B526664	9.6	0.50	B533472
Dissolved Strontium (Sr)	mg/L	0.23	1.6	B526664	0.31	0.020	B533472
Dissolved Sulphur (S)	mg/L	15	64	B526664	16	0.20	B533472
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	B526843	<0.00020	0.00020	B526843
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	B526843	<0.0010	0.0010	B526843
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	B526843	<0.0010	0.0010	B526843
Dissolved Uranium (U)	mg/L	0.00065	0.0011	B526843	0.00072	0.00010	B526843
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	B526843	<0.0010	0.0010	B526843
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	B526843	<0.0030	0.0030	B526843
RDL = Reportable Detection Limit							

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Bureau Veritas Job #: C473383
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ911
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/09/12
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B528119	N/A	2024/09/20	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B525721	N/A	2024/09/22	Wonjeong Park
F1-BTEX	CALC/MS	B525308	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B525238	N/A	2024/09/19	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B525123	N/A	2024/09/23	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B527692	N/A	2024/09/19	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B527537	N/A	2024/09/19	Amy Phan
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen
Conductivity @25C	COND	B528173	N/A	2024/09/20	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B525372	N/A	2024/09/18	Automated Statchk
Hardness	CALC	B525286	N/A	2024/09/20	Automated Statchk
Mercury (Dissolved) by CV	CV	B528696	2024/09/19	2024/09/20	Kevin Hung
Mercury (Total) by CV	CV	B528690	2024/09/19	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B526664	N/A	2024/09/19	Sarah Dolan
Elements by ICP - Total	ICPA	B532249	2024/09/23	2024/09/23	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B526843	N/A	2024/09/18	Kevin Huang
Elements by ICPMS - Total	ICPM	B532243	2024/09/23	2024/09/23	Kevin Huang
Ion Balance	CALC	B525287	N/A	2024/09/20	Automated Statchk
Ammonia-N (Total)	KONE	B526223	N/A	2024/09/18	Adam Fishleigh
Nitrate and Nitrite	CALC	B525377	N/A	2024/09/20	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B528431	N/A	2024/09/19	Isabelle White
Nitrate (as N)	CALC	B525134	2024/09/20	2024/09/20	Automated Statchk
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B519729	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B528171	N/A	2024/09/20	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Total Sulphide	SPEC	B525743	N/A	2024/09/18	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B532964	2024/09/23	2024/09/24	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B519963	N/A	2024/09/20	Automated Statchk
Nitrogen (Total)	AC/COL	B527360	2024/09/19	2024/09/19	Yan Lin
Carbon (Total Organic)	TECH	B527743	N/A	2024/09/19	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B525417	2024/09/18	2024/09/18	Daryl Viktoria Noval
Turbidity	TURB	B526759	N/A	2024/09/18	Dafne Strozake Maximo

Bureau Veritas ID: CVQ911 Dup
Sample ID: AEMP-US-03
Matrix: Water

Collected: 2024/09/12
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Suspended Solids (NFR)	BAL	B525417	2024/09/18	2024/09/18	Daryl Viktoria Noval

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473383
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ912
Sample ID: AEMP-US-05
Matrix: Water

Collected: 2024/09/12
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B528119	N/A	2024/09/20	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B525721	N/A	2024/09/22	Wonjeong Park
F1-BTEX	CALC/MS	B525308	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B525238	N/A	2024/09/19	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B525123	N/A	2024/09/24	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B527692	N/A	2024/09/19	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B527537	N/A	2024/09/19	Amy Phan
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen
Conductivity @25C	COND	B528173	N/A	2024/09/20	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B525372	N/A	2024/09/18	Automated Statchk
Hardness	CALC	B525286	N/A	2024/09/20	Automated Statchk
Mercury (Dissolved) by CV	CV	B528696	2024/09/19	2024/09/20	Kevin Hung
Mercury (Total) by CV	CV	B528690	2024/09/19	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B526664	N/A	2024/09/19	Sarah Dolan
Elements by ICP - Total	ICPA	B532939	2024/09/23	2024/09/24	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B526843	N/A	2024/09/18	Kevin Huang
Elements by ICPMS - Total	ICPM	B532937	2024/09/23	2024/09/23	Jason Bao
Ion Balance	CALC	B525287	N/A	2024/09/20	Automated Statchk
Ammonia-N (Total)	KONE	B526181	N/A	2024/09/18	Adam Fishleigh
Nitrate and Nitrite	CALC	B525377	N/A	2024/09/20	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B528431	N/A	2024/09/19	Isabelle White
Nitrate (as N)	CALC	B525379	2024/09/20	2024/09/20	Automated Statchk
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B519729	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B528171	N/A	2024/09/20	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Total Sulphide	SPEC	B525743	N/A	2024/09/18	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B525425	2024/09/18	2024/09/19	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B525380	N/A	2024/09/20	Automated Statchk
Nitrogen (Total)	AC/COL	B527360	2024/09/19	2024/09/19	Yan Lin
Carbon (Total Organic)	TECH	B527743	N/A	2024/09/19	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B525417	2024/09/18	2024/09/18	Daryl Viktoria Noval
Turbidity	TURB	B526759	N/A	2024/09/18	Dafne Strozake Maximo

Bureau Veritas ID: CVQ913
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B532535	N/A	2024/09/23	Jeanette Chavol Melo

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Bureau Veritas Job #: C473383
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ913
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B525721	N/A	2024/09/22	Wonjeong Park
F1-BTEX	CALC/MS	B525308	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B525238	N/A	2024/09/19	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B525123	N/A	2024/09/24	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B527692	N/A	2024/09/19	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B527537	N/A	2024/09/19	Amy Phan
True Colour	SPEC/COL	B528625	N/A	2024/09/19	Tyler Orr
Carbon (DOC)	TECH	B527874	N/A	2024/09/19	Jill Yuen
Conductivity @25C	COND	B532542	N/A	2024/09/23	Jeanette Chavol Melo
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/21	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B525372	N/A	2024/09/18	Automated Statchk
Hardness	CALC	B525286	N/A	2024/09/20	Automated Statchk
Mercury (Dissolved) by CV	CV	B528696	2024/09/19	2024/09/20	Kevin Hung
Mercury (Total) by CV	CV	B528690	2024/09/19	2024/09/20	Kevin Hung
Elements by ICP - Dissolved	ICPA	B533472	N/A	2024/09/23	Vincy Scaria
Elements by ICP - Total	ICPA	B532511	2024/09/23	2024/09/23	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B526843	N/A	2024/09/18	Kevin Huang
Elements by ICPMS - Total	ICPM	B532497	2024/09/23	2024/09/23	Kevin Huang
Ion Balance	CALC	B525287	N/A	2024/09/20	Automated Statchk
Ammonia-N (Total)	KONE	B526223	N/A	2024/09/18	Adam Fishleigh
Nitrate and Nitrite	CALC	B525377	N/A	2024/09/20	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B528431	N/A	2024/09/19	Isabelle White
Nitrate (as N)	CALC	B525379	2024/09/20	2024/09/20	Automated Statchk
Oil and Grease by IR	IR	B525087	2024/09/18	2024/09/18	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B519729	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B532539	N/A	2024/09/23	Jeanette Chavol Melo
Orthophosphate by Automated Analyzer	KONE	B527878	N/A	2024/09/19	Yan Lin
Total Sulphide	SPEC	B525743	N/A	2024/09/18	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B527220	2024/09/19	2024/09/20	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B525380	N/A	2024/09/20	Automated Statchk
Nitrogen (Total)	AC/COL	B527350	2024/09/19	2024/09/19	Yan Lin
Carbon (Total Organic)	TECH	B527743	N/A	2024/09/19	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B525265	2024/09/18	2024/09/18	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B527228	2024/09/19	2024/09/19	Haydee Estilong
Turbidity	TURB	B526759	N/A	2024/09/18	Dafne Strozake Maximo

Bureau Veritas ID: CVQ913 Dup
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/19	2024/09/23	Don Maxwell

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Bureau Veritas Job #: C473383
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVQ913 Dup
Sample ID: AEMP-DS-02
Matrix: Water

Collected: 2024/09/13
Relinquished: 2024/09/15
Received: 2024/09/17

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Turbidity	TURB	B526759	N/A	2024/09/18	Dafne Strozake Maximo

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GENERAL COMMENTS

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

Package 1	4.3°C

Note: C of C information incomplete; Relinquished time was not filled out. Alex Haigh was notified via email and the lab proceeded with the analysis.

Sample CVQ911 [AEMP-US-03] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Sample was analyzed past method specified hold time for Total Dissolved Solids (Filt. Residue).

Sample CVQ912 [AEMP-US-05] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

Sample CVQ913 [AEMP-DS-02] : Sample was analyzed past method specified hold time for Turbidity. 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 Orthophosphate by Automated Analyzer. Sample was analyzed past method specified hold time for True Colour. Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water.

SEMIVOLATILE ORGANICS BY GC-MS (WATER) Comments

Sample CVQ913 [AEMP-DS-02] Target & Alkylated PAH in Water by GC/MS: Duplicate exceeds acceptance criteria due to sample non homogeneity.

Results relate only to the items tested.

DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CVQ911	AEMP-US-03	Water	TDS	INORG	Sample	#10 Past Hold Time	#4 Re-Analysis Required	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C1 benzo(a) anthracene/chrysene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C1 phenanthrene/anthracene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C1-dibenzothiophene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C2 benzo(a) anthracene/chrysene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C2 fluoranthene/pyrene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.

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DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C2 phenanthrene/anthracene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C2-dibenzothiophene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C2-fluorene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C3 benzo(a) anthracene/chrysene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C3 fluoranthene/pyrene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C3 phenanthrene/anthracene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C3-dibenzothiophene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C3-fluorene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C4 fluoranthene/pyrene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C4 phenanthrene/anthracene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.
CVQ913	AEMP-DS-02	Water	PAHALKAB-W	PAH	C4-dibenzothiophene	#6 Duplicate RPD Above Control Limit	#6 Non-Homogeneous	This may increase the uncertainty associated with these results.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B525087	RRA	Method Blank	Oil and grease	2024/09/18	<2.0		mg/L	
B525265	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/09/18	<2.0		mg/L	
B525417	DVN	Method Blank	Total Suspended Solids	2024/09/18	<0.96		mg/L	
B525425	DVN	Method Blank	Total Dissolved Solids	2024/09/19	<10		mg/L	
B525721	WPK	Method Blank	1,4-Difluorobenzene (sur.)	2024/09/22		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/22		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/22		94	%	50 - 140
			Benzene	2024/09/22	<0.00040		mg/L	
			Toluene	2024/09/22	<0.00040		mg/L	
			Ethylbenzene	2024/09/22	<0.00040		mg/L	
			m & p-Xylene	2024/09/22	<0.00080		mg/L	
			o-Xylene	2024/09/22	<0.00040		mg/L	
			F1 (C6-C10)	2024/09/22	<0.10		mg/L	
B525743	LYV	Method Blank	Total Sulphide	2024/09/18	<0.0018		mg/L	
B526181	AFI	Method Blank	Total Ammonia (N)	2024/09/18	<0.015		mg/L	
B526223	AFI	Method Blank	Total Ammonia (N)	2024/09/18	<0.015		mg/L	
B526664	S1D	Method Blank	Dissolved Iron (Fe)	2024/09/19	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/19	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/19	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/19	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/19	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/19	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/19	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/19	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/19	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/19	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/19	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/19	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/19	<0.30		mg/L	
B526759	DSX	Method Blank	Turbidity	2024/09/18	<0.10		NTU	
B526843	KH2	Method Blank	Dissolved Aluminum (Al)	2024/09/18	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/09/18	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/09/18	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/09/18	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/09/18	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/09/18	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/09/18	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/09/18	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/09/18	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/09/18	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/09/18	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/09/18	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/09/18	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/09/18	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/09/18	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/09/18	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/09/18	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/09/18	<0.0010		mg/L	
B527220	HE1	Method Blank	Total Dissolved Solids	2024/09/20	<10		mg/L	
B527228	HE1	Method Blank	Total Suspended Solids	2024/09/19	<1.0		mg/L	
B527350	YL7	Method Blank	Total Nitrogen (N)	2024/09/19	<0.020		mg/L	
B527360	YL7	Method Blank	Total Nitrogen (N)	2024/09/19	<0.020		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B527537	AP1	Method Blank	Chemical Oxygen Demand	2024/09/19	<10		mg/L	
B527692	HAP	Method Blank	Chloride (Cl)	2024/09/19	<1.0		mg/L	
			Sulphate (SO4)	2024/09/19	<1.0		mg/L	
B527743	JYU	Method Blank	Total Organic Carbon (C)	2024/09/19	<0.50		mg/L	
B527874	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/09/19	<0.50		mg/L	
B527878	YL7	Method Blank	Orthophosphate (P)	2024/09/19	<0.0030		mg/L	
B527995	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/09/23		103	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		107	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		86	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		68	%	50 - 130
			Acenaphthene	2024/09/23	<0.10		ug/L	
			Acenaphthylene	2024/09/23	<0.10		ug/L	
			Acridine	2024/09/23	<0.040		ug/L	
			Anthracene	2024/09/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/09/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/09/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/09/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/09/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/09/23	<0.050		ug/L	
			Chrysene	2024/09/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/09/23	<0.0075		ug/L	
			Fluoranthene	2024/09/23	<0.010		ug/L	
			Fluorene	2024/09/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/09/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/09/23	<0.0085		ug/L	
			2-Methylnaphthalene	2024/09/23	<0.10		ug/L	
			Naphthalene	2024/09/23	<0.10		ug/L	
			Phenanthrene	2024/09/23	<0.050		ug/L	
			Perylene	2024/09/23	<0.050		ug/L	
			Pyrene	2024/09/23	<0.020		ug/L	
			Quinoline	2024/09/23	<0.20		ug/L	
			Retene	2024/09/23	<0.050		ug/L	
			C1-Naphthalene	2024/09/23	<0.10		ug/L	
			C3-Naphthalene	2024/09/23	<0.10		ug/L	
			C4-Naphthalene	2024/09/23	<0.10		ug/L	
			C2-Naphthalene	2024/09/23	<0.10		ug/L	
			Biphenyl	2024/09/23	<0.020		ug/L	
			C1-biphenyl	2024/09/23	<0.020		ug/L	
			C2-biphenyl	2024/09/23	<0.020		ug/L	
			C1-fluorene	2024/09/23	<0.050		ug/L	
			C2-fluorene	2024/09/23	<0.050		ug/L	
			C3-fluorene	2024/09/23	<0.050		ug/L	
			Dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C4 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/09/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/09/23	<0.10		ug/L	
B528008	CHA	Method Blank	O-TERPHENYL (sur.)	2024/09/21		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21	<0.10		mg/L	
B528119	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/20	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/20	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/20	<1.0		mg/L	
			Carbonate (CO3)	2024/09/20	<1.0		mg/L	
			Hydroxide (OH)	2024/09/20	<1.0		mg/L	
B528173	AYE	Method Blank	Conductivity	2024/09/20	<2.0		uS/cm	
B528431	ISW	Method Blank	Nitrite (N)	2024/09/19	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/19	<0.010		mg/L	
B528625	TOR	Method Blank	True Colour	2024/09/19	<2.0		PtCo units	
B528690	KHU	Method Blank	Total Mercury (Hg)	2024/09/20	<0.0019		ug/L	
B528696	KHU	Method Blank	Dissolved Mercury (Hg)	2024/09/20	<0.0019		ug/L	
B532243	KH2	Method Blank	Total Aluminum (Al)	2024/09/23	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/23	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/23	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/23	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/23	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/23	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/23	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/23	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/23	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/23	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/23	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/23	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/23	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/23	<0.0010		mg/L	
			Total Uranium (U)	2024/09/23	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/23	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/23	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/23	<0.0010		mg/L	
B532249	VSC	Method Blank	Total Iron (Fe)	2024/09/23	<0.060		mg/L	
			Total Lithium (Li)	2024/09/23	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/23	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/23	<0.0040		mg/L	
			Total Potassium (K)	2024/09/23	<0.30		mg/L	
			Total Sodium (Na)	2024/09/23	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/23	<0.020		mg/L	
			Total Sulphur (S)	2024/09/23	<0.20		mg/L	

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			Total Phosphorus (P)	2024/09/23	<0.10		mg/L	
			Total Barium (Ba)	2024/09/23	<0.010		mg/L	
			Total Silicon (Si)	2024/09/23	<0.50		mg/L	
			Total Boron (B)	2024/09/23	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/23	<0.30		mg/L	
B532497	KH2	Method Blank	Total Aluminum (Al)	2024/09/23	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/23	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/23	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/23	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/23	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/23	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/23	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/23	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/23	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/23	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/23	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/23	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/23	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/23	<0.0010		mg/L	
			Total Uranium (U)	2024/09/23	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/23	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/23	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/23	<0.0010		mg/L	
B532511	VSC	Method Blank	Total Iron (Fe)	2024/09/23	<0.060		mg/L	
			Total Lithium (Li)	2024/09/23	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/23	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/23	<0.0040		mg/L	
			Total Potassium (K)	2024/09/23	<0.30		mg/L	
			Total Sodium (Na)	2024/09/23	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/23	<0.020		mg/L	
			Total Sulphur (S)	2024/09/23	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/23	<0.10		mg/L	
			Total Barium (Ba)	2024/09/23	<0.010		mg/L	
			Total Silicon (Si)	2024/09/23	<0.50		mg/L	
			Total Boron (B)	2024/09/23	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/23	<0.30		mg/L	
B532535	JVM	Method Blank	Alkalinity (Total as CaCO3)	2024/09/23	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/23	<1.0		mg/L	
			Carbonate (CO3)	2024/09/23	<1.0		mg/L	
			Hydroxide (OH)	2024/09/23	<1.0		mg/L	
B532542	JVM	Method Blank	Conductivity	2024/09/23	<2.0		uS/cm	
B532937	JAB	Method Blank	Total Aluminum (Al)	2024/09/24	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/24	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/24	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/24	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/24	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/24	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/24	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/24	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/24	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/24	<0.00010		mg/L	

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			Total Arsenic (As)	2024/09/24	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/24	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/24	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/24	<0.0010		mg/L	
			Total Uranium (U)	2024/09/24	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/24	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/24	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/24	<0.0010		mg/L	
B532939	VSC	Method Blank	Total Iron (Fe)	2024/09/24	<0.060		mg/L	
			Total Lithium (Li)	2024/09/24	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/24	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/24	<0.0040		mg/L	
			Total Potassium (K)	2024/09/24	<0.30		mg/L	
			Total Sodium (Na)	2024/09/24	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/24	<0.020		mg/L	
			Total Sulphur (S)	2024/09/24	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/24	<0.10		mg/L	
			Total Barium (Ba)	2024/09/24	<0.010		mg/L	
			Total Silicon (Si)	2024/09/24	<0.50		mg/L	
			Total Boron (B)	2024/09/24	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/24	<0.30		mg/L	
B532964	HE1	Method Blank	Total Dissolved Solids	2024/09/24	<10		mg/L	
B533472	VSC	Method Blank	Dissolved Iron (Fe)	2024/09/23	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/23	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/23	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/23	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/23	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/23	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/23	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/23	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/23	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/23	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/23	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/23	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/23	<0.30		mg/L	
B525417	DVN	RPD [CVQ911-12]	Total Suspended Solids	2024/09/18	5.7		%	20
B526759	DSX	RPD [CVQ913-12]	Turbidity	2024/09/18	6.9		%	20
B527995	DM	RPD [CVQ913-14]	Acenaphthene	2024/09/23	NC		%	30
			Acenaphthylene	2024/09/23	NC		%	30
			Acridine	2024/09/23	NC		%	30
			Anthracene	2024/09/23	NC		%	30
			Benzo(a)anthracene	2024/09/23	NC		%	30
			Benzo(b&j)fluoranthene	2024/09/23	NC		%	30
			Benzo(k)fluoranthene	2024/09/23	NC		%	30
			Benzo(g,h,i)perylene	2024/09/23	NC		%	30
			Benzo(c)phenanthrene	2024/09/23	NC		%	30
			Benzo(a)pyrene	2024/09/23	NC		%	30
			Benzo(e)pyrene	2024/09/23	NC		%	30
			Chrysene	2024/09/23	NC		%	30
			Dibenz(a,h)anthracene	2024/09/23	NC		%	30
			Fluoranthene	2024/09/23	NC		%	30
			Fluorene	2024/09/23	NC		%	30

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			Indeno(1,2,3-cd)pyrene	2024/09/23	NC		%	30
			Indeno(1,2,3-cd)fluoranthene	2024/09/23	NC		%	30
			2-Methylnaphthalene	2024/09/23	NC		%	30
			Naphthalene	2024/09/23	NC		%	30
			Phenanthrene	2024/09/23	NC		%	30
			Perylene	2024/09/23	NC		%	30
			Pyrene	2024/09/23	NC		%	30
			Quinoline	2024/09/23	NC		%	30
			Retene	2024/09/23	NC		%	30
			C1-Naphthalene	2024/09/23	NC		%	30
			C3-Naphthalene	2024/09/23	NC		%	30
			C4-Naphthalene	2024/09/23	NC		%	30
			C2-Naphthalene	2024/09/23	NC		%	30
			Biphenyl	2024/09/23	NC		%	30
			C1-biphenyl	2024/09/23	NC		%	30
			C2-biphenyl	2024/09/23	NC		%	30
			C1-fluorene	2024/09/23	NC		%	30
			C2-fluorene	2024/09/23	110 (1)		%	30
			C3-fluorene	2024/09/23	125 (1)		%	30
			Dibenzothiophene	2024/09/23	NC		%	30
			C1-dibenzothiophene	2024/09/23	151 (1)		%	30
			C2-dibenzothiophene	2024/09/23	163 (1)		%	30
			C3-dibenzothiophene	2024/09/23	142 (1)		%	30
			C4-dibenzothiophene	2024/09/23	102 (1)		%	30
			C1 phenanthrene/anthracene	2024/09/23	84 (1)		%	30
			C2 phenanthrene/anthracene	2024/09/23	134 (1)		%	30
			C3 phenanthrene/anthracene	2024/09/23	154 (1)		%	30
			C4 phenanthrene/anthracene	2024/09/23	133 (1)		%	30
			C1 fluoranthene/pyrene	2024/09/23	NC		%	30
			C2 fluoranthene/pyrene	2024/09/23	141 (1)		%	30
			C3 fluoranthene/pyrene	2024/09/23	171 (1)		%	30
			C4 fluoranthene/pyrene	2024/09/23	152 (1)		%	30
			C1 benzo(a)anthracene/chrysene	2024/09/23	123 (1)		%	30
			C2 benzo(a)anthracene/chrysene	2024/09/23	176 (1)		%	30
			C3 benzo(a)anthracene/chrysene	2024/09/23	144 (1)		%	30
			C4 benzo(a)anthracene/chrysene	2024/09/23	NC		%	30
			C1benzobjkfluoranthene/benzoapyrene	2024/09/23	NC		%	30
			C2benzobjkfluoranthene/benzoapyrene	2024/09/23	NC		%	30
			C1-Acenaphthene	2024/09/23	NC		%	30
			1-Methylnaphthalene	2024/09/23	NC		%	30
B528008	CHA	RPD [CVQ913-11]	F2 (C10-C16 Hydrocarbons)	2024/09/22	NC		%	30
B525417	DVN	Matrix Spike [CVQ911-12]	Total Suspended Solids	2024/09/18		110	%	80 - 120
B528690	KHU	Matrix Spike [CVQ912-07]	Total Mercury (Hg)	2024/09/20		104	%	80 - 120
B525087	RRA	LCS	Oil and grease	2024/09/18		91	%	70 - 130
B525265	RRA	LCS	Total Petroleum Hydrocarbon	2024/09/18		92	%	70 - 130
B525417	DVN	LCS	Total Suspended Solids	2024/09/18		99	%	80 - 120
B525425	DVN	LCS	Total Dissolved Solids	2024/09/19		93	%	80 - 120
B525721	WPK	LCS	1,4-Difluorobenzene (sur.)	2024/09/22		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/22		104	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/22		98	%	50 - 140
			Benzene	2024/09/22		90	%	60 - 130
			Toluene	2024/09/22		91	%	60 - 130

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			Ethylbenzene	2024/09/22		97	%	60 - 130
			m & p-Xylene	2024/09/22		92	%	60 - 130
			o-Xylene	2024/09/22		95	%	60 - 130
			F1 (C6-C10)	2024/09/22		106	%	60 - 140
B525743	LYV	LCS	Total Sulphide	2024/09/18		91	%	80 - 120
B526181	AFI	LCS	Total Ammonia (N)	2024/09/18		102	%	80 - 120
B526223	AFI	LCS	Total Ammonia (N)	2024/09/18		102	%	80 - 120
B526664	S1D	LCS	Dissolved Iron (Fe)	2024/09/19		99	%	80 - 120
			Dissolved Lithium (Li)	2024/09/19		100	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/19		104	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/19		99	%	80 - 120
			Dissolved Potassium (K)	2024/09/19		104	%	80 - 120
			Dissolved Sodium (Na)	2024/09/19		99	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/19		92	%	80 - 120
			Dissolved Sulphur (S)	2024/09/19		98	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/19		97	%	80 - 120
			Dissolved Barium (Ba)	2024/09/19		96	%	80 - 120
			Dissolved Silicon (Si)	2024/09/19		98	%	80 - 120
			Dissolved Boron (B)	2024/09/19		93	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/19		102	%	80 - 120
B526759	DSX	LCS	Turbidity	2024/09/18		100	%	80 - 120
B526843	KH2	LCS	Dissolved Aluminum (Al)	2024/09/18		102	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/18		99	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/18		99	%	80 - 120
			Dissolved Copper (Cu)	2024/09/18		100	%	80 - 120
			Dissolved Lead (Pb)	2024/09/18		98	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/18		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/18		102	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/18		99	%	80 - 120
			Dissolved Selenium (Se)	2024/09/18		107	%	80 - 120
			Dissolved Silver (Ag)	2024/09/18		99	%	80 - 120
			Dissolved Arsenic (As)	2024/09/18		103	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/18		95	%	80 - 120
			Dissolved Tin (Sn)	2024/09/18		102	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/18		99	%	80 - 120
			Dissolved Uranium (U)	2024/09/18		100	%	80 - 120
			Dissolved Vanadium (V)	2024/09/18		101	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/18		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/18		96	%	80 - 120
B527220	HE1	LCS	Total Dissolved Solids	2024/09/20		94	%	80 - 120
B527228	HE1	LCS	Total Suspended Solids	2024/09/19		96	%	80 - 120
B527350	YL7	LCS	Total Nitrogen (N)	2024/09/19		101	%	80 - 120
B527360	YL7	LCS	Total Nitrogen (N)	2024/09/19		104	%	80 - 120
B527537	AP1	LCS	Chemical Oxygen Demand	2024/09/19		101	%	80 - 120
B527692	HAP	LCS	Chloride (Cl)	2024/09/19		95	%	80 - 120
			Sulphate (SO4)	2024/09/19		98	%	80 - 120
B527743	JYU	LCS	Total Organic Carbon (C)	2024/09/19		110	%	80 - 120
B527874	JYU	LCS	Dissolved Organic Carbon (C)	2024/09/19		109	%	80 - 120
B527878	YL7	LCS	Orthophosphate (P)	2024/09/19		101	%	80 - 120
B527995	DM	LCS	D10-ANTHRACENE (sur.)	2024/09/23		108	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		111	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		90	%	50 - 130

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			D8-NAPHTHALENE (sur.)	2024/09/23		70	%	50 - 130
			Acenaphthene	2024/09/23		81	%	50 - 130
			Acenaphthylene	2024/09/23		84	%	50 - 130
			Acridine	2024/09/23		87	%	50 - 130
			Anthracene	2024/09/23		84	%	50 - 130
			Benzo(a)anthracene	2024/09/23		101	%	50 - 130
			Benzo(b&j)fluoranthene	2024/09/23		97	%	50 - 130
			Benzo(k)fluoranthene	2024/09/23		93	%	50 - 130
			Benzo(g,h,i)perylene	2024/09/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/09/23		98	%	50 - 130
			Benzo(a)pyrene	2024/09/23		99	%	50 - 130
			Benzo(e)pyrene	2024/09/23		86	%	50 - 130
			Chrysene	2024/09/23		95	%	50 - 130
			Dibenz(a,h)anthracene	2024/09/23		98	%	50 - 130
			Fluoranthene	2024/09/23		102	%	50 - 130
			Fluorene	2024/09/23		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/09/23		101	%	50 - 130
			2-Methylnaphthalene	2024/09/23		70	%	50 - 130
			Naphthalene	2024/09/23		61	%	50 - 130
			Phenanthrene	2024/09/23		86	%	50 - 130
			Perylene	2024/09/23		81	%	50 - 130
			Pyrene	2024/09/23		103	%	50 - 130
			Quinoline	2024/09/23		102	%	50 - 130
			C1-Naphthalene	2024/09/23		56	%	50 - 130
			C3-Naphthalene	2024/09/23		75	%	50 - 130
			C2-Naphthalene	2024/09/23		61	%	50 - 130
			C1-biphenyl	2024/09/23		51	%	50 - 130
			C1 phenanthrene/anthracene	2024/09/23		101	%	50 - 130
			C2 phenanthrene/anthracene	2024/09/23		102	%	50 - 130
			C1 fluoranthene/pyrene	2024/09/23		102	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/09/23		92	%	30 - 130
			1-Methylnaphthalene	2024/09/23		56	%	50 - 130
B528008	CHA	LCS	O-TERPHENYL (sur.)	2024/09/21		95	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21		89	%	60 - 140
B528119	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/20		103	%	80 - 120
B528171	AYE	LCS	pH	2024/09/20		100	%	97 - 103
B528173	AYE	LCS	Conductivity	2024/09/20		101	%	90 - 110
B528431	ISW	LCS	Nitrite (N)	2024/09/19		103	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/19		107	%	80 - 120
B528625	TOR	LCS	True Colour	2024/09/19		108	%	80 - 120
B528690	KHU	LCS	Total Mercury (Hg)	2024/09/20		99	%	80 - 120
B528696	KHU	LCS	Dissolved Mercury (Hg)	2024/09/20		99	%	80 - 120
B532243	KH2	LCS	Total Aluminum (Al)	2024/09/23		107	%	80 - 120
			Total Chromium (Cr)	2024/09/23		107	%	80 - 120
			Total Cobalt (Co)	2024/09/23		109	%	80 - 120
			Total Copper (Cu)	2024/09/23		109	%	80 - 120
			Total Lead (Pb)	2024/09/23		109	%	80 - 120
			Total Antimony (Sb)	2024/09/23		104	%	80 - 120
			Total Molybdenum (Mo)	2024/09/23		104	%	80 - 120
			Total Nickel (Ni)	2024/09/23		108	%	80 - 120
			Total Selenium (Se)	2024/09/23		105	%	80 - 120
			Total Silver (Ag)	2024/09/23		106	%	80 - 120

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Arsenic (As)	2024/09/23		107	%	80 - 120
			Total Thallium (Tl)	2024/09/23		112	%	80 - 120
			Total Tin (Sn)	2024/09/23		102	%	80 - 120
			Total Titanium (Ti)	2024/09/23		102	%	80 - 120
			Total Uranium (U)	2024/09/23		109	%	80 - 120
			Total Vanadium (V)	2024/09/23		107	%	80 - 120
			Total Zinc (Zn)	2024/09/23		106	%	80 - 120
			Total Beryllium (Be)	2024/09/23		104	%	80 - 120
B532249	VSC	LCS	Total Iron (Fe)	2024/09/23		99	%	80 - 120
			Total Lithium (Li)	2024/09/23		100	%	80 - 120
			Total Magnesium (Mg)	2024/09/23		103	%	80 - 120
			Total Manganese (Mn)	2024/09/23		96	%	80 - 120
			Total Potassium (K)	2024/09/23		98	%	80 - 120
			Total Sodium (Na)	2024/09/23		97	%	80 - 120
			Total Strontium (Sr)	2024/09/23		100	%	80 - 120
			Total Sulphur (S)	2024/09/23		95	%	80 - 120
			Total Phosphorus (P)	2024/09/23		96	%	80 - 120
			Total Barium (Ba)	2024/09/23		105	%	80 - 120
			Total Silicon (Si)	2024/09/23		93	%	80 - 120
			Total Boron (B)	2024/09/23		100	%	80 - 120
			Total Calcium (Ca)	2024/09/23		97	%	80 - 120
B532497	KH2	LCS	Total Aluminum (Al)	2024/09/23		112	%	80 - 120
			Total Chromium (Cr)	2024/09/23		112	%	80 - 120
			Total Cobalt (Co)	2024/09/23		113	%	80 - 120
			Total Copper (Cu)	2024/09/23		112	%	80 - 120
			Total Lead (Pb)	2024/09/23		110	%	80 - 120
			Total Antimony (Sb)	2024/09/23		108	%	80 - 120
			Total Molybdenum (Mo)	2024/09/23		115	%	80 - 120
			Total Nickel (Ni)	2024/09/23		111	%	80 - 120
			Total Selenium (Se)	2024/09/23		113	%	80 - 120
			Total Silver (Ag)	2024/09/23		111	%	80 - 120
			Total Arsenic (As)	2024/09/23		112	%	80 - 120
			Total Thallium (Tl)	2024/09/23		110	%	80 - 120
			Total Tin (Sn)	2024/09/23		112	%	80 - 120
			Total Titanium (Ti)	2024/09/23		111	%	80 - 120
			Total Uranium (U)	2024/09/23		112	%	80 - 120
			Total Vanadium (V)	2024/09/23		112	%	80 - 120
			Total Zinc (Zn)	2024/09/23		110	%	80 - 120
			Total Beryllium (Be)	2024/09/23		106	%	80 - 120
B532511	VSC	LCS	Total Iron (Fe)	2024/09/23		99	%	80 - 120
			Total Lithium (Li)	2024/09/23		99	%	80 - 120
			Total Magnesium (Mg)	2024/09/23		103	%	80 - 120
			Total Manganese (Mn)	2024/09/23		95	%	80 - 120
			Total Potassium (K)	2024/09/23		97	%	80 - 120
			Total Sodium (Na)	2024/09/23		96	%	80 - 120
			Total Strontium (Sr)	2024/09/23		98	%	80 - 120
			Total Sulphur (S)	2024/09/23		95	%	80 - 120
			Total Phosphorus (P)	2024/09/23		96	%	80 - 120
			Total Barium (Ba)	2024/09/23		103	%	80 - 120
			Total Silicon (Si)	2024/09/23		92	%	80 - 120
			Total Boron (B)	2024/09/23		99	%	80 - 120
			Total Calcium (Ca)	2024/09/23		96	%	80 - 120

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B532535	JVM	LCS	Alkalinity (Total as CaCO3)	2024/09/23		100	%	80 - 120
B532539	JVM	LCS	pH	2024/09/23		100	%	97 - 103
B532542	JVM	LCS	Conductivity	2024/09/23		101	%	90 - 110
B532937	JAB	LCS	Total Aluminum (Al)	2024/09/23		100	%	80 - 120
			Total Chromium (Cr)	2024/09/23		106	%	80 - 120
			Total Cobalt (Co)	2024/09/23		108	%	80 - 120
			Total Copper (Cu)	2024/09/23		106	%	80 - 120
			Total Lead (Pb)	2024/09/23		111	%	80 - 120
			Total Antimony (Sb)	2024/09/23		112	%	80 - 120
			Total Molybdenum (Mo)	2024/09/23		109	%	80 - 120
			Total Nickel (Ni)	2024/09/23		104	%	80 - 120
			Total Selenium (Se)	2024/09/23		110	%	80 - 120
			Total Silver (Ag)	2024/09/23		106	%	80 - 120
			Total Arsenic (As)	2024/09/23		107	%	80 - 120
			Total Thallium (Tl)	2024/09/23		115	%	80 - 120
			Total Tin (Sn)	2024/09/23		106	%	80 - 120
			Total Titanium (Ti)	2024/09/23		102	%	80 - 120
			Total Uranium (U)	2024/09/23		108	%	80 - 120
			Total Vanadium (V)	2024/09/23		108	%	80 - 120
			Total Zinc (Zn)	2024/09/23		105	%	80 - 120
			Total Beryllium (Be)	2024/09/23		107	%	80 - 120
B532939	VSC	LCS	Total Iron (Fe)	2024/09/24		101	%	80 - 120
			Total Lithium (Li)	2024/09/24		95	%	80 - 120
			Total Magnesium (Mg)	2024/09/24		98	%	80 - 120
			Total Manganese (Mn)	2024/09/24		95	%	80 - 120
			Total Potassium (K)	2024/09/24		98	%	80 - 120
			Total Sodium (Na)	2024/09/24		97	%	80 - 120
			Total Strontium (Sr)	2024/09/24		94	%	80 - 120
			Total Sulphur (S)	2024/09/24		95	%	80 - 120
			Total Phosphorus (P)	2024/09/24		94	%	80 - 120
			Total Barium (Ba)	2024/09/24		98	%	80 - 120
			Total Silicon (Si)	2024/09/24		96	%	80 - 120
			Total Boron (B)	2024/09/24		98	%	80 - 120
			Total Calcium (Ca)	2024/09/24		97	%	80 - 120
B532964	HE1	LCS	Total Dissolved Solids	2024/09/24		93	%	80 - 120
B533472	VSC	LCS	Dissolved Iron (Fe)	2024/09/23		93	%	80 - 120
			Dissolved Lithium (Li)	2024/09/23		96	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/23		100	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/23		92	%	80 - 120
			Dissolved Potassium (K)	2024/09/23		96	%	80 - 120
			Dissolved Sodium (Na)	2024/09/23		94	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/23		95	%	80 - 120
			Dissolved Sulphur (S)	2024/09/23		92	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/23		93	%	80 - 120
			Dissolved Barium (Ba)	2024/09/23		100	%	80 - 120
			Dissolved Silicon (Si)	2024/09/23		88	%	80 - 120
			Dissolved Boron (B)	2024/09/23		95	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/23		92	%	80 - 120
B527350	YL7	SRM	Total Nitrogen (N)	2024/09/19		102	%	80 - 120

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B527360	YL7	SRM	Total Nitrogen (N)	2024/09/19		106	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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.

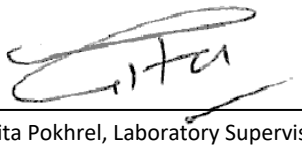
Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473383
Report Date: 2024/09/26

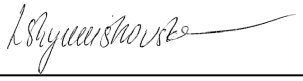
Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NORMAN WELLS, NT
Project #: 417085-54419-24200

VALIDATION SIGNATURE PAGE

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

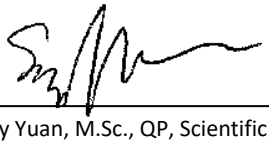


Gita Pokhrel, Laboratory Supervisor

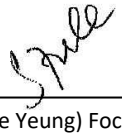


Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics

Rahul Suryawanshi, Senior Analyst



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



Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

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Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VALIDATION SIGNATURE PAGE(CONT'D)

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

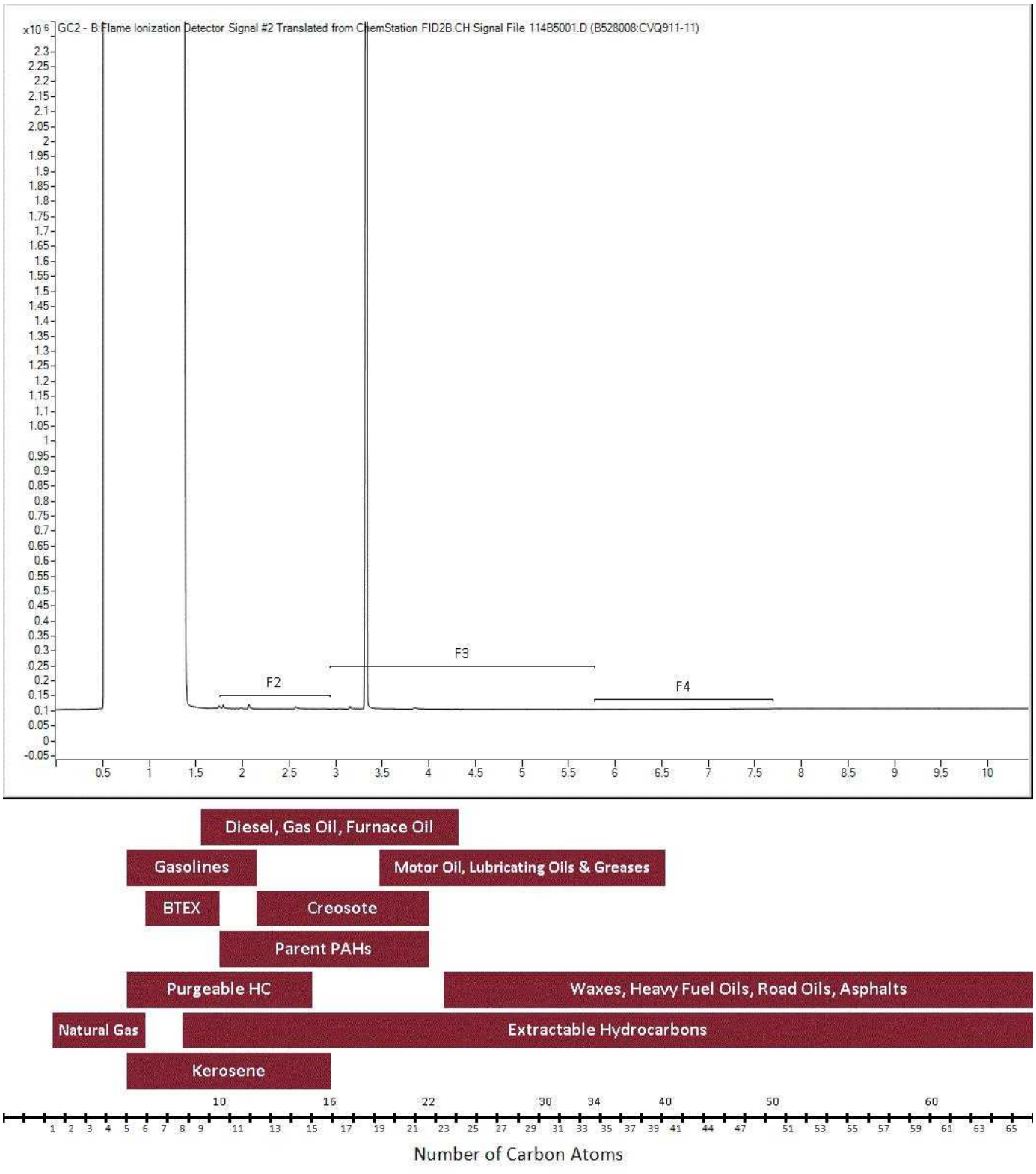
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C473383
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ911

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-03

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



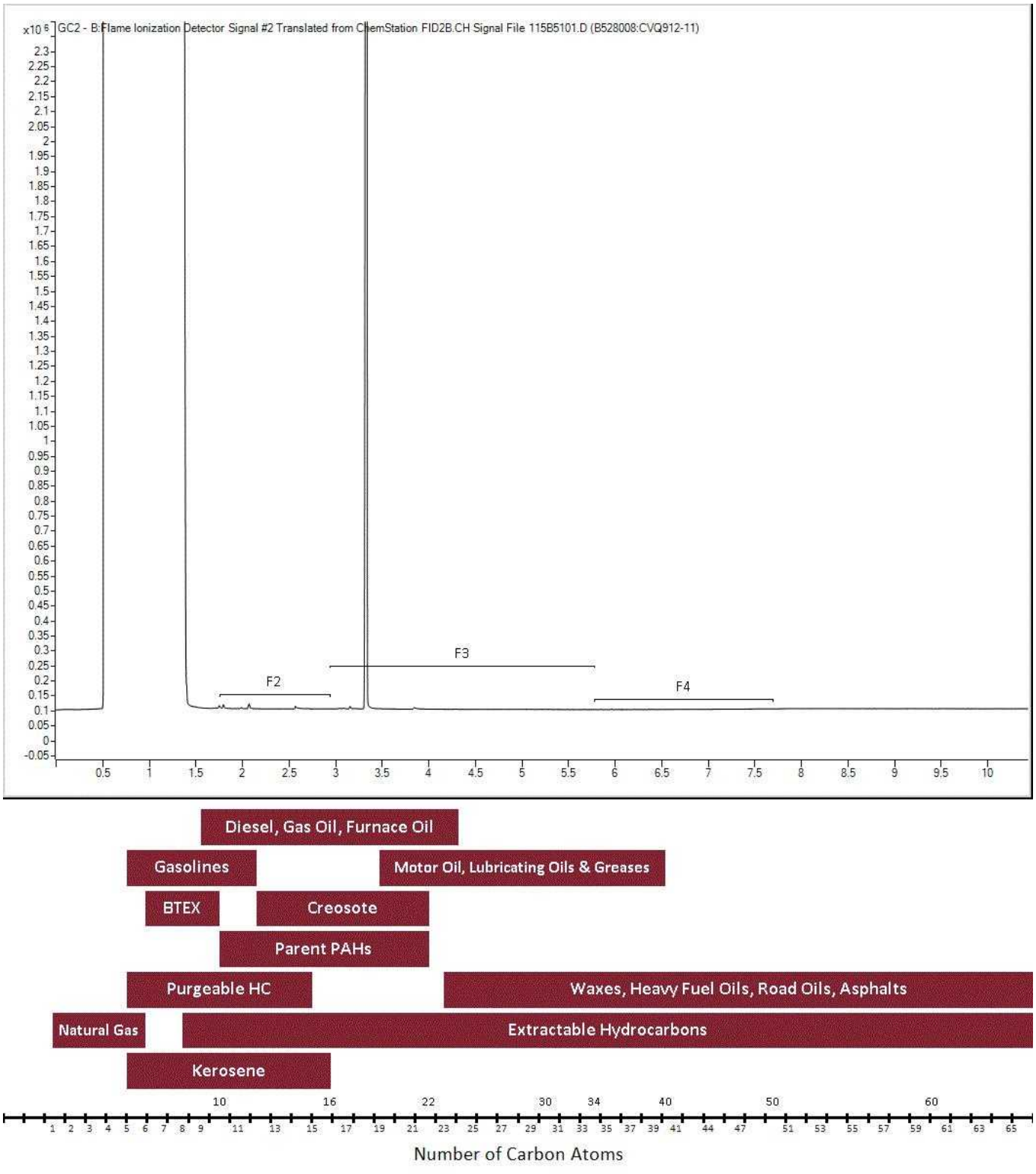
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C473383
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ912

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-US-05

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



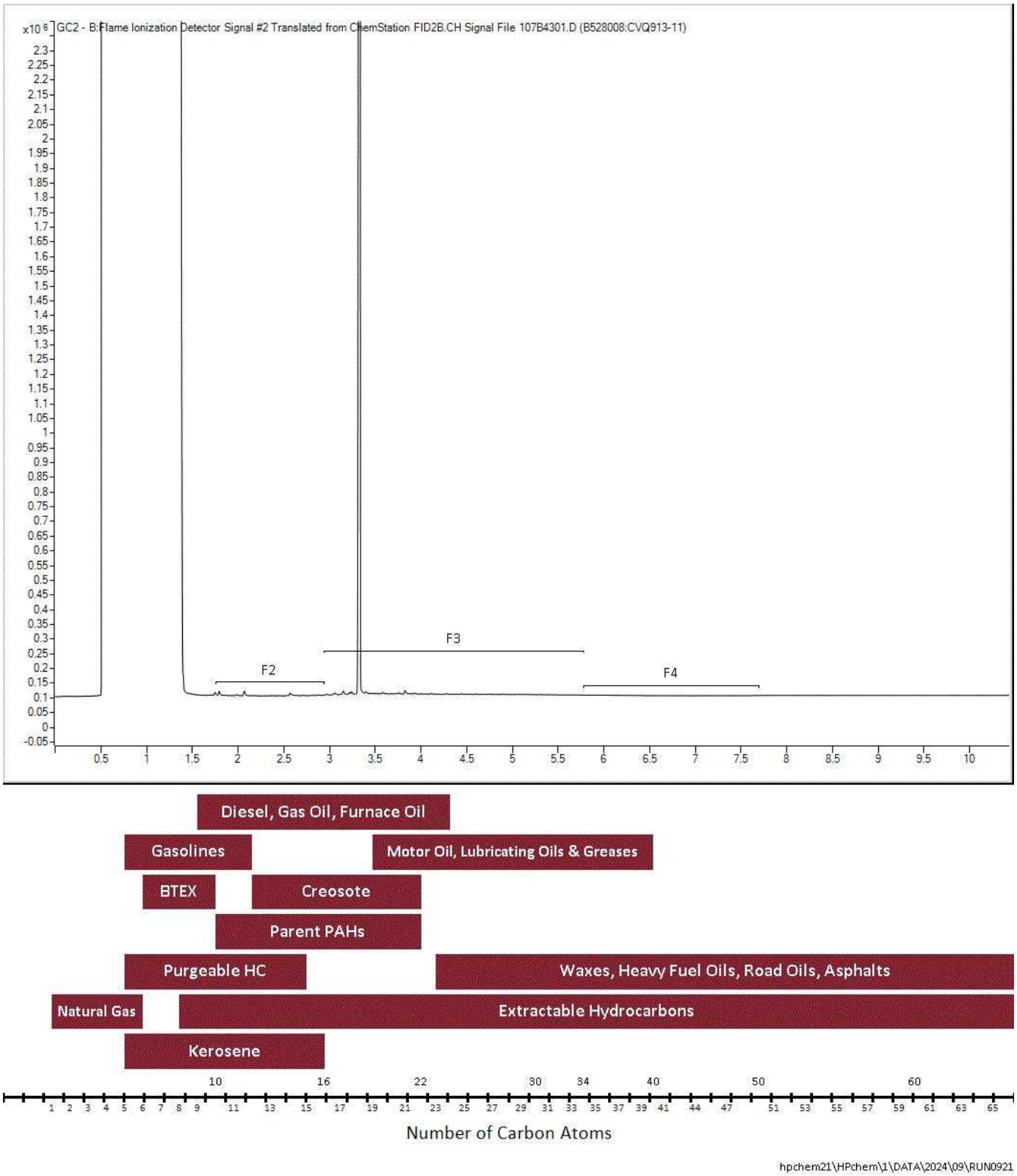
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C473383
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ913

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



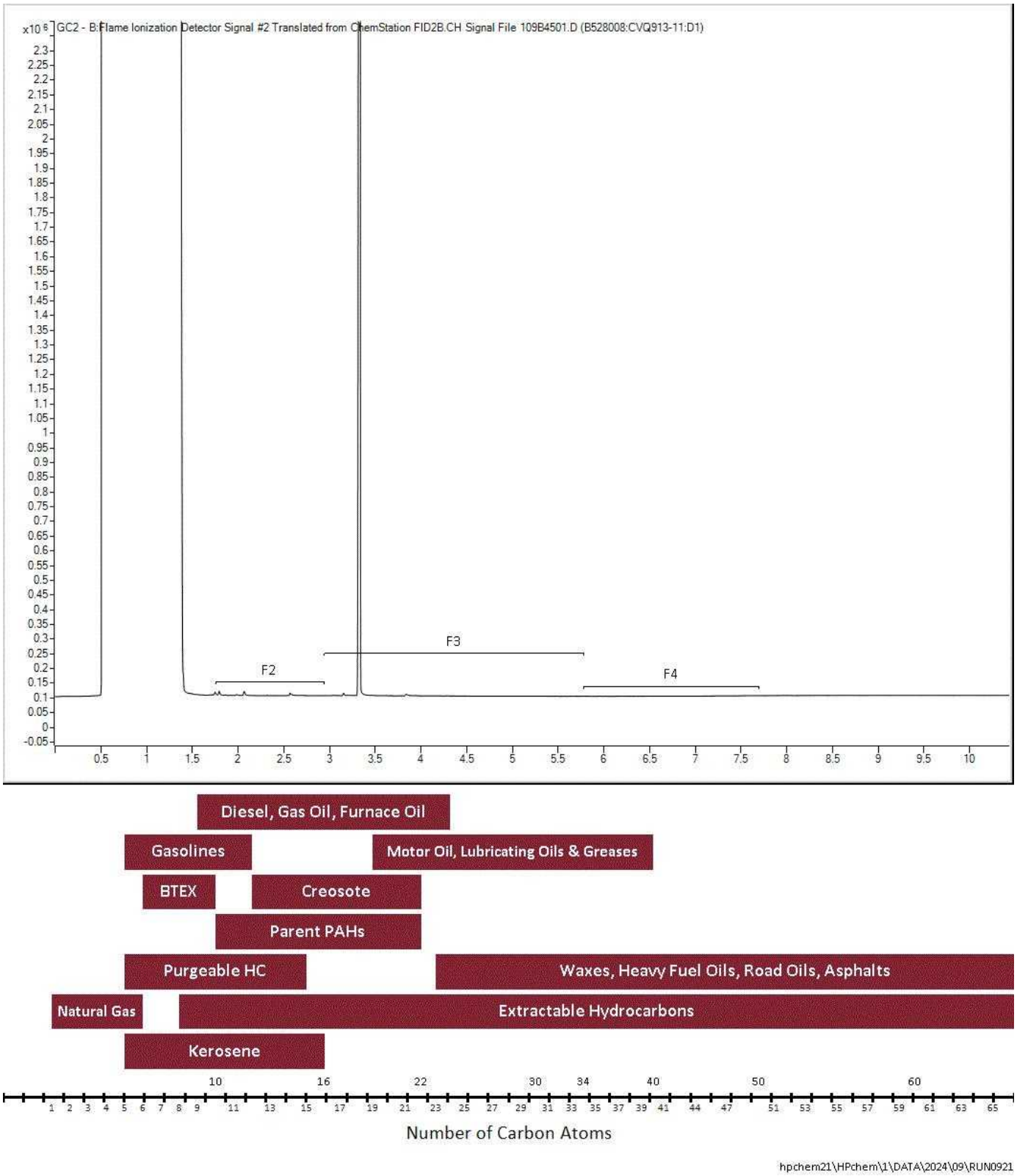
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C473383
Report Date: 2024/09/26
Bureau Veritas Sample: CVQ913 Lab-Dup

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NORMAN WELLS, NT
Client ID: AEMP-DS-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



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

Maxxam
A Bureau Veritas Group Company

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4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 292868

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Alex Haigh	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: alex.haigh@worley.com	Email: alex.haigh@worley.com
Ph: 587-897-6249	Ph: 587 897 6249
Sampler Name (Print): Stacy Gibb	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True color, TSS, TDS, Turbidity	Oil & grease	TOC, Doc, Sulphide	Nitrate, Nitrite, Ammonia (total), TKN	Ortho phosphate	Sulphur - Total - dissolved	COD	Alkylated PAH, TPH
1	AEMP - US - 03		X			18	2024/09/12	11:23	X			X	X							X	X					X		X	X	X	X	X	X	X	X
2	AEMP - US - 05		X			18	2024/09/12	16:00	X			X	X							X	X					X		X	X	X	X	X	X	X	X
3	AEMP - DS - 02		X			18	2024/09/13	10:03	X			X	X							X	X					X		X	X	X	X	X	X	X	X
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					

MCAL-2024-09-1410

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: email canada.chemistry@worley.com cacal_IOR data track@worley.com stacy.gibb@worley.com IES A2601436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

	YES	NO	COOLER ID #			
SEAL PRESENT	✓		TEMP °C	5.1	2.6	5.2
SEAL INTACT	✓			1	2	3
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	1	2	3
SEAL INTACT						
COOLING MEDIA PRESENT						

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	1	2	3
SEAL INTACT						
COOLING MEDIA PRESENT						

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. SG	STACY GIBB	2024/09/15		1.	Jeff Hansen	2024/09/17	1520
2.				2.			
3.				3.			

LAB USE ONLY
MAXXAM JOB # C473383
SAMPLES
LABELED BY: DAC
VERIFIED BY: SL

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200
Your C.O.C. #: 298625

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/10/02
Report #: R3565429
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474360
Received: 2024/09/19, 15:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	3	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	3	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	3		Auto Calc
Cadmium - low level CCME - Dissolved	3		Auto Calc
Cadmium - low level CCME (Total)	3		Auto Calc
Chloride/Sulphate by Auto Colourimetry	3	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter	3	AB SOP-00016	SM 24 5220D m
True Colour	3	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1)	3	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C	3	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (2)	3	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S)	3		Auto Calc
Hardness	3		Auto Calc
Mercury (Dissolved) by CV (3)	3	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	3	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (3)	3	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total	3	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (3)	3	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total	3	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance	3		Auto Calc
Ammonia-N (Total)	3	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite	3		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water	3	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N)	3		Auto Calc
Oil and Grease by IR	3	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (4)	3	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (5)	3		Auto Calc
pH @25°C (6)	3	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (7)	3	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide	3	AB SOP-00080	SM 24 4500 S2-A D Fm

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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474360
Received: 2024/09/19, 15:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue)	3	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	3	BBY WI-00033	Auto Calc
Nitrogen (Total)	3	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (8)	3	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease)	3	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR)	3	AB SOP-00061	SM 24 2540 D m
Turbidity	3	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) Silica gel clean up employed.
(3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(4) Alkylated PAH results are semiquantitative

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(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(6) 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.
(7) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(8) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
02 Oct 2024 13:51:26

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CVW175	CVW176	CVW177		
Sampling Date		2024/09/17 13:39	2024/09/17 14:40	2024/09/17 11:02		
COC Number		298625	298625	298625		
	UNITS	**AEMP-US-01**	**AEMP-US-02**	**AEMP-DS-05**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	0.10	B528008
Volatiles						
Benzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
Toluene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
Ethylbenzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
m & p-Xylene	mg/L	<0.00080	<0.00080	<0.00080	0.00080	B529589
o-Xylene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
Xylenes (Total)	mg/L	<0.00089	<0.00089	<0.00089	0.00089	B528879
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	<0.10	0.10	B528879
F1 (C6-C10)	mg/L	<0.10	<0.10	<0.10	0.10	B529589
Extraction Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	95	92	90		B528008
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	105	104	102		B529589
4-Bromofluorobenzene (sur.)	%	97	96	97		B529589
D4-1,2-Dichloroethane (sur.)	%	90	92	95		B529589

RDL = Reportable Detection Limit

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Bureau Veritas Job #: C474360
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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CVW175		CVW176	CVW177		
Sampling Date		2024/09/17 13:39		2024/09/17 14:40	2024/09/17 11:02		
COC Number		298625		298625	298625		
	UNITS	**AEMP-US-01**	**RDL**	**AEMP-US-02**	**AEMP-DS-05**	**RDL**	**QC Batch**
Calculated Parameters							
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.14	0.020	<0.20	<0.20	0.20	B527777
Nutrients							
Total Nitrogen (N)	mg/L	0.21	0.020	<0.20 (1)	<0.20 (1)	0.20	B531283

RDL = Reportable Detection Limit
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVW175	CVW176		CVW177		
Sampling Date		2024/09/17 13:39	2024/09/17 14:40		2024/09/17 11:02		
COC Number		298625	298625		298625		
	UNITS	**AEMP-US-01**	**AEMP-US-02**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements							
Total Cadmium (Cd)	mg/L	0.000029	0.000021	B528530	0.000092	0.000020	B528530
Total Aluminum (Al)	mg/L	0.23	0.091	B536722	1.6	0.0030	B535845
Total Antimony (Sb)	mg/L	<0.00060	<0.00060	B536722	<0.00060	0.00060	B535845
Total Arsenic (As)	mg/L	0.00043	0.00034	B536722	0.0012	0.00020	B535845
Total Barium (Ba)	mg/L	0.045	0.040	B536729	0.066	0.010	B535884
Total Beryllium (Be)	mg/L	<0.0010	<0.0010	B536722	<0.0010	0.0010	B535845
Total Boron (B)	mg/L	<0.020	<0.020	B536729	<0.020	0.020	B535884
Total Calcium (Ca)	mg/L	26	30	B536729	46	0.30	B535884
Total Chromium (Cr)	mg/L	<0.0010	<0.0010	B536722	0.0018	0.0010	B535845
Total Cobalt (Co)	mg/L	<0.00030	<0.00030	B536722	0.0010	0.00030	B535845
Total Copper (Cu)	mg/L	<0.0010	<0.0010	B536722	0.0030	0.0010	B535845
Total Iron (Fe)	mg/L	0.38	0.097	B536729	1.5	0.060	B535884
Total Lead (Pb)	mg/L	0.00049	<0.00020	B536722	0.0014	0.00020	B535845
Total Lithium (Li)	mg/L	<0.020	0.025	B536729	<0.020	0.020	B535884
Total Magnesium (Mg)	mg/L	8.8	9.4	B536729	11	0.20	B535884
Total Manganese (Mn)	mg/L	0.011	0.0052	B536729	0.041	0.0040	B535884
Total Molybdenum (Mo)	mg/L	0.00062	0.00093	B536722	0.0010	0.00020	B535845
Total Nickel (Ni)	mg/L	0.0015	0.0014	B536722	0.0044	0.00050	B535845
Total Phosphorus (P)	mg/L	<0.10	<0.10	B536729	<0.10	0.10	B535884
Total Potassium (K)	mg/L	0.89	0.89	B536729	1.5	0.30	B535884
Total Selenium (Se)	mg/L	<0.00020	0.00024	B536722	0.00034	0.00020	B535845
Total Silicon (Si)	mg/L	1.4	1.3	B536729	2.3	0.50	B535884
Total Silver (Ag)	mg/L	<0.00010	<0.00010	B536722	<0.00010	0.00010	B535845
Total Sodium (Na)	mg/L	12	7.4	B536729	10	0.50	B535884
Total Strontium (Sr)	mg/L	0.19	0.22	B536729	0.24	0.020	B535884
Total Sulphur (S)	mg/L	9.7	13	B536729	15	0.20	B535884
Total Thallium (Tl)	mg/L	<0.00020	<0.00020	B536722	<0.00020	0.00020	B535845
Total Tin (Sn)	mg/L	<0.0010	<0.0010	B536722	<0.0010	0.0010	B535845
Total Titanium (Ti)	mg/L	0.0068	0.0015	B536722	0.048	0.0010	B535845
Total Uranium (U)	mg/L	0.00051	0.00071	B536722	0.00098	0.00010	B535845
Total Vanadium (V)	mg/L	<0.0010	<0.0010	B536722	0.0034	0.0010	B535845
RDL = Reportable Detection Limit							

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Advisian
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Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVW175	CVW176		CVW177		
Sampling Date		2024/09/17 13:39	2024/09/17 14:40		2024/09/17 11:02		
COC Number		298625	298625		298625		
	UNITS	**AEMP-US-01**	**AEMP-US-02**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	<0.0030	<0.0030	B536722	0.013	0.0030	B535845
RDL = Reportable Detection Limit							

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Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW175			CVW175			CVW176		
Sampling Date		2024/09/17 13:39			2024/09/17 13:39			2024/09/17 14:40		
COC Number		298625			298625			298625		
	UNITS	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-02**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	110	0.50	B528765				120	0.50	B528765
Ion Balance (% Difference)	%	1.2	N/A	B528771				3.2	N/A	B528771
Nitrate (N)	mg/L	0.063	0.010	B528784				0.046	0.020	B528784
Nitrate (NO3)	mg/L	0.28	0.044	B528781				0.20	0.089	B528781
Nitrite (NO2)	mg/L	<0.033	0.033	B528781				<0.033	0.033	B528781
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B528409				<0.0020	0.0020	B528409
Demand Parameters										
Chemical Oxygen Demand	mg/L	15	10	B531591				<10 (1)	10	B531591
Elements										
Dissolved Cadmium (Cd)	mg/L	<0.000020	0.000020	B528528				0.000021	0.000020	B528880
Misc. Inorganics										
Conductivity	uS/cm	280	2.0	B530015				280	2.0	B530015
Dissolved Organic Carbon (C)	mg/L	2.6	0.50	B533058				2.5	0.50	B533058
pH	pH	6.88	N/A	B530011				6.89	N/A	B530011
Total Organic Carbon (C)	mg/L	2.0	0.50	B532052				2.1	0.50	B532052
Total Dissolved Solids	mg/L	160	10	B532164	160	10	B532164	170	10	B532164
Total Suspended Solids	mg/L	13	1.0	B532171				1.8	1.0	B532171
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B530000				<1.0	1.0	B530000
Alkalinity (Total as CaCO3)	mg/L	84	1.0	B530000				90	1.0	B530000
Bicarbonate (HCO3)	mg/L	100	1.0	B530000				110	1.0	B530000
Carbonate (CO3)	mg/L	<1.0	1.0	B530000				<1.0	1.0	B530000
Hydroxide (OH)	mg/L	<1.0	1.0	B530000				<1.0	1.0	B530000
Total Sulphide	mg/L	<0.0018	0.0018	B531389				<0.0018	0.0018	B531389
Chloride (Cl)	mg/L	19	1.0	B529938				8.8	1.0	B529938
Sulphate (SO4)	mg/L	34	1.0	B529938				44	1.0	B529938
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B532623				<0.015	0.015	B532623

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW175			CVW175			CVW176		
Sampling Date		2024/09/17 13:39			2024/09/17 13:39			2024/09/17 14:40		
COC Number		298625			298625			298625		
	UNITS	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-02**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B529756				<0.0030	0.0030	B529756
Nitrite (N)	mg/L	<0.010	0.010	B529947				<0.010	0.010	B529947
Nitrate plus Nitrite (N)	mg/L	0.063	0.010	B529947				0.046 (1)	0.020	B529947
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B526827				<2.0	2.0	B526827
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B528926				<2.0	2.0	B528926
Physical Properties										
True Colour	PtCo units	4.1	2.0	B531702				4.4	2.0	B531702
Physical Properties										
Turbidity	NTU	7.7	0.10	B530450	9.0	0.10	B530450	3.2	0.10	B530450

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
(1) Detection limits raised due to matrix interference.

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RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW176			CVW177		
Sampling Date		2024/09/17 14:40			2024/09/17 11:02		
COC Number		298625			298625		
	UNITS	**AEMP-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L				130	0.50	B528765
Ion Balance (% Difference)	%				2.0	N/A	B528771
Nitrate (N)	mg/L				0.043	0.010	B528784
Nitrate (NO3)	mg/L				0.19	0.044	B528781
Nitrite (NO2)	mg/L				<0.033	0.033	B528781
Sulphide (as H2S)	mg/L				0.0046	0.0020	B528409
Demand Parameters							
Chemical Oxygen Demand	mg/L				15	10	B531591
Elements							
Dissolved Cadmium (Cd)	mg/L				0.000026	0.000020	B528882
Misc. Inorganics							
Conductivity	uS/cm	280	2.0	B530015	310	2.0	B530015
Dissolved Organic Carbon (C)	mg/L				3.1	0.50	B533058
pH	pH	7.02	N/A	B530011	6.95	N/A	B530011
Total Organic Carbon (C)	mg/L				2.4	0.50	B532052
Total Dissolved Solids	mg/L				180	10	B532164
Total Suspended Solids	mg/L				61	1.0	B532171
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B530000	<1.0	1.0	B530000
Alkalinity (Total as CaCO3)	mg/L	89	1.0	B530000	98	1.0	B530000
Bicarbonate (HCO3)	mg/L	110	1.0	B530000	120	1.0	B530000
Carbonate (CO3)	mg/L	<1.0	1.0	B530000	<1.0	1.0	B530000
Hydroxide (OH)	mg/L	<1.0	1.0	B530000	<1.0	1.0	B530000
Total Sulphide	mg/L				0.0043	0.0018	B531389
Chloride (Cl)	mg/L				8.9	1.0	B529938
Sulphate (SO4)	mg/L				48	1.0	B529938
Nutrients							
Total Ammonia (N)	mg/L				<0.015	0.015	B532623
Orthophosphate (P)	mg/L				<0.0030	0.0030	B529756

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW176			CVW177		
Sampling Date		2024/09/17 14:40			2024/09/17 11:02		
COC Number		298625			298625		
	UNITS	**AEMP-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B529947	<0.010	0.010	B529947
Nitrate plus Nitrite (N)	mg/L	0.043	0.020	B529947	0.043	0.010	B529947
Misc. Organics							
Oil and grease	mg/L	<2.0	2.0	B526827	<2.0	2.0	B526827
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B528926	<2.0	2.0	B528926
Physical Properties							
True Colour	PtCo units				4.2	2.0	B531702
Physical Properties							
Turbidity	NTU				26	0.10	B530450

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVW175	CVW176	CVW177		
Sampling Date		2024/09/17 13:39	2024/09/17 14:40	2024/09/17 11:02		
COC Number		298625	298625	298625		
	UNITS	**AEMP-US-01**	**AEMP-US-02**	**AEMP-DS-05**	**RDL**	**QC Batch**
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	<0.000010	0.000010	B528607
Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Acridine	ug/L	<0.040	<0.040	<0.040	0.040	B527995
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	B527995
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
Fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	B527995
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Perylene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
Quinoline	ug/L	<0.20	<0.20	<0.20	0.20	B527995
Retene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C1-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
C3-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
C4-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
C2-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
RDL = Reportable Detection Limit						

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVW175	CVW176	CVW177		
Sampling Date		2024/09/17 13:39	2024/09/17 14:40	2024/09/17 11:02		
COC Number		298625	298625	298625		
	UNITS	**AEMP-US-01**	**AEMP-US-02**	**AEMP-DS-05**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C2-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C3-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C2-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C3-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C4-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
C1-Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
1-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Extraction Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	105	111	111		B527995
D8-ACENAPHTHYLENE (sur.)	%	88	97	91		B527995
D8-NAPHTHALENE (sur.)	%	77	85	78		B527995
TERPHENYL-D14 (sur.)	%	109	116	115		B527995
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CVW175			CVW175			CVW176		
Sampling Date		2024/09/17 13:39			2024/09/17 13:39			2024/09/17 14:40		
COC Number		298625			298625			298625		
	UNITS	**AEMP-US-01**	**RDL**	**QC Batch**	**AEMP-US-01 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-US-02**	**RDL**	**QC Batch**
Elements										
Dissolved Mercury (Hg)	ug/L	<0.0019	0.0019	B531708	<0.0019	0.0019	B531708	<0.0019	0.0019	B531708
Total Mercury (Hg)	ug/L	<0.0019	0.0019	B531710				<0.0019	0.0019	B531710

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CVW176			CVW177		
Sampling Date		2024/09/17 14:40			2024/09/17 11:02		
COC Number		298625			298625		
	UNITS	**AEMP-US-02 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements							
Dissolved Mercury (Hg)	ug/L				<0.0019	0.0019	B531708
Total Mercury (Hg)	ug/L	<0.0019	0.0019	B531710	<0.0019	0.0019	B531710

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVW175		CVW176		CVW177		
Sampling Date		2024/09/17 13:39		2024/09/17 14:40		2024/09/17 11:02		
COC Number		298625		298625		298625		
	UNITS	**AEMP-US-01**	**QC Batch**	**AEMP-US-02**	**QC Batch**	**AEMP-DS-05**	**RDL**	**QC Batch**
Elements								
Dissolved Aluminum (Al)	mg/L	0.019	B530408	0.032	B530408	0.038	0.0030	B530408
Dissolved Antimony (Sb)	mg/L	<0.00060	B530408	<0.00060	B530408	<0.00060	0.00060	B530408
Dissolved Arsenic (As)	mg/L	0.00024	B530408	0.00029	B530408	0.00027	0.00020	B530408
Dissolved Barium (Ba)	mg/L	0.038	B532314	0.036	B532309	0.042	0.010	B532309
Dissolved Beryllium (Be)	mg/L	<0.0010	B530408	<0.0010	B530408	<0.0010	0.0010	B530408
Dissolved Boron (B)	mg/L	<0.020	B532314	<0.020	B532309	<0.020	0.020	B532309
Dissolved Calcium (Ca)	mg/L	28	B532314	31	B532309	36	0.30	B532309
Dissolved Chromium (Cr)	mg/L	<0.0010	B530408	<0.0010	B530408	<0.0010	0.0010	B530408
Dissolved Cobalt (Co)	mg/L	<0.00030	B530408	<0.00030	B530408	<0.00030	0.00030	B530408
Dissolved Copper (Cu)	mg/L	0.0013	B530408	<0.0010	B530408	0.0026	0.0010	B530408
Dissolved Iron (Fe)	mg/L	<0.060	B532314	<0.060	B532309	<0.060	0.060	B532309
Dissolved Lead (Pb)	mg/L	<0.00020	B530408	0.00052	B530408	<0.00020	0.00020	B530408
Dissolved Lithium (Li)	mg/L	0.024	B532314	<0.020	B532309	<0.020	0.020	B532309
Dissolved Magnesium (Mg)	mg/L	10	B532314	10	B532309	11	0.20	B532309
Dissolved Manganese (Mn)	mg/L	<0.0040	B532314	<0.0040	B532309	<0.0040	0.0040	B532309
Dissolved Molybdenum (Mo)	mg/L	0.00075	B530408	0.0011	B530408	0.00091	0.00020	B543199
Dissolved Nickel (Ni)	mg/L	0.00084	B530408	0.0012	B530408	0.0014	0.00050	B530408
Dissolved Phosphorus (P)	mg/L	<0.10	B532314	<0.10	B532309	<0.10	0.10	B532309
Dissolved Potassium (K)	mg/L	0.91	B532314	0.90	B532309	0.98	0.30	B532309
Dissolved Selenium (Se)	mg/L	<0.00020	B530408	0.00025	B530408	0.00029	0.00020	B530408
Dissolved Silicon (Si)	mg/L	1.3	B532314	1.2	B532309	1.4	0.50	B532309
Dissolved Silver (Ag)	mg/L	<0.00010	B530408	<0.00010	B530408	<0.00010	0.00010	B530408
Dissolved Sodium (Na)	mg/L	13	B532314	7.8	B532309	8.4	0.50	B532309
Dissolved Strontium (Sr)	mg/L	0.20	B532314	0.20	B532309	0.21	0.020	B532309
Dissolved Sulphur (S)	mg/L	11	B532314	14	B532309	15	0.20	B532309
Dissolved Thallium (Tl)	mg/L	<0.00020	B530408	<0.00020	B530408	<0.00020	0.00020	B530408
Dissolved Tin (Sn)	mg/L	<0.0010	B530408	<0.0010	B530408	<0.0010	0.0010	B530408
Dissolved Titanium (Ti)	mg/L	<0.0010	B530408	<0.0010	B530408	<0.0010	0.0010	B530408
Dissolved Uranium (U)	mg/L	0.00047	B530408	0.00068	B530408	0.00071	0.00010	B530408
Dissolved Vanadium (V)	mg/L	<0.0010	B530408	<0.0010	B530408	<0.0010	0.0010	B530408
Dissolved Zinc (Zn)	mg/L	0.0043	B530408	<0.0030	B530408	0.0031	0.0030	B530408
RDL = Reportable Detection Limit								

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVW177		
Sampling Date		2024/09/17 11:02		
COC Number		298625		
	UNITS	**AEMP-DS-05 Lab-Dup**	**RDL**	**QC Batch**
Elements				
Dissolved Molybdenum (Mo)	mg/L	0.00095	0.00020	B543199

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVW175
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B530000	N/A	2024/09/21	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B529589	N/A	2024/09/21	Richard Ly
F1-BTEX	CALC/MS	B528879	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B528528	N/A	2024/09/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B528530	N/A	2024/09/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B529938	N/A	2024/09/20	Tyler Orr
COD by Colorimeter	M/PROB	B531591	N/A	2024/09/21	Santiago Rios Origgi
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B533058	N/A	2024/09/23	Ming Dong
Conductivity @25C	COND	B530015	N/A	2024/09/21	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B528409	N/A	2024/09/23	Automated Statchk
Hardness	CALC	B528765	N/A	2024/09/24	Automated Statchk
Mercury (Dissolved) by CV	CV	B531708	2024/09/21	2024/09/24	Kevin Hung
Mercury (Total) by CV	CV	B531710	2024/09/21	2024/09/23	Kevin Hung
Elements by ICP - Dissolved	ICPA	B532314	N/A	2024/09/24	Vincy Scaria
Elements by ICP - Total	ICPA	B536729	2024/09/25	2024/09/26	Ilonka Kovac
Elements by ICPMS - Dissolved	ICPM	B530408	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B536722	2024/09/25	2024/09/25	Kevin Huang
Ion Balance	CALC	B528771	N/A	2024/09/24	Automated Statchk
Ammonia-N (Total)	KONE	B532623	N/A	2024/09/23	Sana Baban
Nitrate and Nitrite	CALC	B528781	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B529947	N/A	2024/09/20	Isabelle White
Nitrate (as N)	CALC	B528784	2024/09/23	2024/09/23	Automated Statchk
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/20	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B528607	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B530011	N/A	2024/09/21	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B529756	N/A	2024/09/20	Yan Lin
Total Sulphide	SPEC	B531389	N/A	2024/09/22	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B532164	2024/09/23	2024/09/24	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B527777	N/A	2024/09/24	Automated Statchk
Nitrogen (Total)	AC/COL	B531283	2024/09/21	2024/09/23	Yan Lin
Carbon (Total Organic)	TECH	B532052	N/A	2024/09/23	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B532171	2024/09/23	2024/09/24	Thi Boi Tran Nguyen
Turbidity	TURB	B530450	N/A	2024/09/20	Dafne Strozake Maximo

Bureau Veritas ID: CVW175 Dup
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury (Dissolved) by CV	CV	B531708	2024/09/21	2024/09/24	Kevin Hung

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVW175 Dup
Sample ID: AEMP-US-01
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Dissolved Solids (Filt. Residue)	BAL	B532164	2024/09/23	2024/09/24	Haydee Estilong
Turbidity	TURB	B530450	N/A	2024/09/20	Dafne Strozake Maximo

Bureau Veritas ID: CVW176
Sample ID: AEMP-US-02
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B530000	N/A	2024/09/20	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B529589	N/A	2024/09/21	Richard Ly
F1-BTEX	CALC/MS	B528879	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B528880	N/A	2024/09/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B528530	N/A	2024/09/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B529938	N/A	2024/09/20	Tyler Orr
COD by Colorimeter	M/PROB	B531591	N/A	2024/09/21	Santiago Rios Origgi
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B533058	N/A	2024/09/23	Ming Dong
Conductivity @25C	COND	B530015	N/A	2024/09/20	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B528409	N/A	2024/09/23	Automated Statchk
Hardness	CALC	B528765	N/A	2024/09/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B531708	2024/09/21	2024/09/24	Kevin Hung
Mercury (Total) by CV	CV	B531710	2024/09/21	2024/09/23	Kevin Hung
Elements by ICP - Dissolved	ICPA	B532309	N/A	2024/09/24	Vincy Scaria
Elements by ICP - Total	ICPA	B536729	2024/09/25	2024/09/26	Ilonka Kovac
Elements by ICPMS - Dissolved	ICPM	B530408	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B536722	2024/09/25	2024/09/25	Kevin Huang
Ion Balance	CALC	B528771	N/A	2024/09/25	Automated Statchk
Ammonia-N (Total)	KONE	B532623	N/A	2024/09/23	Sana Baban
Nitrate and Nitrite	CALC	B528781	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B529947	N/A	2024/09/20	Isabelle White
Nitrate (as N)	CALC	B528784	2024/09/23	2024/09/23	Automated Statchk
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/20	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B528607	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B530011	N/A	2024/09/20	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B529756	N/A	2024/09/20	Yan Lin
Total Sulphide	SPEC	B531389	N/A	2024/09/22	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B532164	2024/09/23	2024/09/24	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B527777	N/A	2024/09/24	Automated Statchk
Nitrogen (Total)	AC/COL	B531283	2024/09/21	2024/09/23	Yan Lin
Carbon (Total Organic)	TECH	B532052	N/A	2024/09/23	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B532171	2024/09/23	2024/09/24	Thi Boi Tran Nguyen

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVW176
Sample ID: AEMP-US-02
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Turbidity	TURB	B530450	N/A	2024/09/20	Dafne Strozake Maximo

Bureau Veritas ID: CVW176 Dup
Sample ID: AEMP-US-02
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B530000	N/A	2024/09/20	Ayesha Ayesha
Conductivity @25C	COND	B530015	N/A	2024/09/20	Ayesha Ayesha
Mercury (Total) by CV	CV	B531710	2024/09/21	2024/09/23	Kevin Hung
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B529947	N/A	2024/09/20	Isabelle White
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
pH @25°C	AT/ALK	B530011	N/A	2024/09/20	Ayesha Ayesha
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep

Bureau Veritas ID: CVW177
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B530000	N/A	2024/09/21	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B529589	N/A	2024/09/21	Richard Ly
F1-BTEX	CALC/MS	B528879	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B528882	N/A	2024/09/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B528530	N/A	2024/09/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B529938	N/A	2024/09/20	Tyler Orr
COD by Colorimeter	M/PROB	B531591	N/A	2024/09/21	Santiago Rios Origgi
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B533058	N/A	2024/09/23	Ming Dong
Conductivity @25C	COND	B530015	N/A	2024/09/21	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B528409	N/A	2024/09/23	Automated Statchk
Hardness	CALC	B528765	N/A	2024/09/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B531708	2024/09/21	2024/09/24	Kevin Hung
Mercury (Total) by CV	CV	B531710	2024/09/21	2024/09/23	Kevin Hung
Elements by ICP - Dissolved	ICPA	B532309	N/A	2024/09/24	Vincy Scaria
Elements by ICP - Total	ICPA	B535884	2024/09/25	2024/09/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B530408	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B535845	2024/09/25	2024/09/25	Kevin Huang
Ion Balance	CALC	B528771	N/A	2024/09/25	Automated Statchk
Ammonia-N (Total)	KONE	B532623	N/A	2024/09/23	Sana Baban
Nitrate and Nitrite	CALC	B528781	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B529947	N/A	2024/09/20	Isabelle White
Nitrate (as N)	CALC	B528784	2024/09/23	2024/09/23	Automated Statchk

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Bureau Veritas Job #: C474360
Report Date: 2024/10/02

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

TEST SUMMARY

Bureau Veritas ID: CVW177
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/20	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B528607	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B530011	N/A	2024/09/21	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B529756	N/A	2024/09/20	Yan Lin
Total Sulphide	SPEC	B531389	N/A	2024/09/22	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B532164	2024/09/23	2024/09/24	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B527777	N/A	2024/09/24	Automated Statchk
Nitrogen (Total)	AC/COL	B531283	2024/09/21	2024/09/23	Yan Lin
Carbon (Total Organic)	TECH	B532052	N/A	2024/09/23	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B532171	2024/09/23	2024/09/24	Thi Boi Tran Nguyen
Turbidity	TURB	B530450	N/A	2024/09/20	Dafne Strozake Maximo

Bureau Veritas ID: CVW177 Dup
Sample ID: AEMP-DS-05
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Elements by ICPMS - Dissolved	ICPM	B543199	N/A	2024/09/30	Kristijan Kovac

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GENERAL COMMENTS

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

Package 1	1.1°C
Package 2	1.9°C

Sample CVW175 [AEMP-US-01] : Sample was analyzed past method specified hold time for True Colour. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample CVW176 [AEMP-US-02] : Sample was analyzed past method specified hold time for True Colour. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample CVW177 [AEMP-DS-05] : Sample was analyzed past method specified hold time for True Colour. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample CVW177, Elements by ICPMS - Dissolved: Test repeated.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B526827	RRA	Method Blank	Oil and grease	2024/09/23	<2.0		mg/L	
B527995	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/09/23		103	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		107	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		86	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		68	%	50 - 130
			Acenaphthene	2024/09/23	<0.10		ug/L	
			Acenaphthylene	2024/09/23	<0.10		ug/L	
			Acridine	2024/09/23	<0.040		ug/L	
			Anthracene	2024/09/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/09/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/09/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/09/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/09/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/09/23	<0.050		ug/L	
			Chrysene	2024/09/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/09/23	<0.0075		ug/L	
			Fluoranthene	2024/09/23	<0.010		ug/L	
			Fluorene	2024/09/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/09/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/09/23	<0.0085		ug/L	
			2-Methylnaphthalene	2024/09/23	<0.10		ug/L	
			Naphthalene	2024/09/23	<0.10		ug/L	
			Phenanthrene	2024/09/23	<0.050		ug/L	
			Perylene	2024/09/23	<0.050		ug/L	
			Pyrene	2024/09/23	<0.020		ug/L	
			Quinoline	2024/09/23	<0.20		ug/L	
			Retene	2024/09/23	<0.050		ug/L	
			C1-Naphthalene	2024/09/23	<0.10		ug/L	
			C3-Naphthalene	2024/09/23	<0.10		ug/L	
			C4-Naphthalene	2024/09/23	<0.10		ug/L	
			C2-Naphthalene	2024/09/23	<0.10		ug/L	
			Biphenyl	2024/09/23	<0.020		ug/L	
			C1-biphenyl	2024/09/23	<0.020		ug/L	
			C2-biphenyl	2024/09/23	<0.020		ug/L	
			C1-fluorene	2024/09/23	<0.050		ug/L	
			C2-fluorene	2024/09/23	<0.050		ug/L	
			C3-fluorene	2024/09/23	<0.050		ug/L	
			Dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C1 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/09/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/09/23	<0.10		ug/L	
B528008	CHA	Method Blank	O-TERPHENYL (sur.)	2024/09/21		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21	<0.10		mg/L	
B528926	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/09/24	<2.0		mg/L	
B529589	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/09/21		104	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		93	%	50 - 140
			Benzene	2024/09/21	<0.00040		mg/L	
			Toluene	2024/09/21	<0.00040		mg/L	
			Ethylbenzene	2024/09/21	<0.00040		mg/L	
			m & p-Xylene	2024/09/21	<0.00080		mg/L	
			o-Xylene	2024/09/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/09/21	<0.10		mg/L	
B529756	YL7	Method Blank	Orthophosphate (P)	2024/09/20	<0.0030		mg/L	
B529938	TOR	Method Blank	Chloride (Cl)	2024/09/20	<1.0		mg/L	
			Sulphate (SO4)	2024/09/20	<1.0		mg/L	
B529947	ISW	Method Blank	Nitrite (N)	2024/09/20	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/20	<0.010		mg/L	
B530000	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/20	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/20	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/20	<1.0		mg/L	
			Carbonate (CO3)	2024/09/20	<1.0		mg/L	
			Hydroxide (OH)	2024/09/20	<1.0		mg/L	
B530015	AYE	Method Blank	Conductivity	2024/09/20	<2.0		uS/cm	
B530408	KH2	Method Blank	Dissolved Aluminum (Al)	2024/09/20	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/09/20	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/09/20	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/09/20	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/09/20	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/09/20	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/09/20	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/09/20	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/09/20	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/09/20	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/09/20	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/09/20	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/09/20	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/09/20	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/09/20	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/09/20	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/09/20	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/09/20	<0.0010		mg/L	
B530450	DSX	Method Blank	Turbidity	2024/09/20	<0.10		NTU	
B531283	YL7	Method Blank	Total Nitrogen (N)	2024/09/23	<0.020		mg/L	
B531389	LYV	Method Blank	Total Sulphide	2024/09/22	<0.0018		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B531591	SOG	Method Blank	Chemical Oxygen Demand	2024/09/21	<10		mg/L	
B531702	MOP	Method Blank	True Colour	2024/09/21	<2.0		PtCo units	
B531708	KHU	Method Blank	Dissolved Mercury (Hg)	2024/09/24	<0.0019		ug/L	
B531710	KHU	Method Blank	Total Mercury (Hg)	2024/09/23	<0.0019		ug/L	
B532052	JYU	Method Blank	Total Organic Carbon (C)	2024/09/23	<0.50		mg/L	
B532164	HE1	Method Blank	Total Dissolved Solids	2024/09/24	<10		mg/L	
B532171	TNY	Method Blank	Total Suspended Solids	2024/09/24	<1.0		mg/L	
B532309	VSC	Method Blank	Dissolved Iron (Fe)	2024/09/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/24	<0.30		mg/L	
B532314	VSC	Method Blank	Dissolved Iron (Fe)	2024/09/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/24	<0.30		mg/L	
B532623	SBN	Method Blank	Total Ammonia (N)	2024/09/23	<0.015		mg/L	
B533058	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/09/23	<0.50		mg/L	
B535845	KH2	Method Blank	Total Aluminum (Al)	2024/09/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/25	<0.0010		mg/L	
			Total Uranium (U)	2024/09/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/25	<0.0030		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Beryllium (Be)	2024/09/25	<0.0010		mg/L	
B535884	VSC	Method Blank	Total Iron (Fe)	2024/09/25	<0.060		mg/L	
			Total Lithium (Li)	2024/09/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/25	<0.0040		mg/L	
			Total Potassium (K)	2024/09/25	<0.30		mg/L	
			Total Sodium (Na)	2024/09/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/25	<0.020		mg/L	
			Total Sulphur (S)	2024/09/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/25	<0.10		mg/L	
			Total Barium (Ba)	2024/09/25	<0.010		mg/L	
			Total Silicon (Si)	2024/09/25	<0.50		mg/L	
			Total Boron (B)	2024/09/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/25	<0.30		mg/L	
B536722	KH2	Method Blank	Total Silver (Ag)	2024/09/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/25	<0.0010		mg/L	
			Total Uranium (U)	2024/09/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/25	<0.0010		mg/L	
			Total Aluminum (Al)	2024/09/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/25	<0.00020		mg/L	
B536729	IK0	Method Blank	Total Iron (Fe)	2024/09/26	<0.060		mg/L	
			Total Lithium (Li)	2024/09/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/26	<0.0040		mg/L	
			Total Potassium (K)	2024/09/26	<0.30		mg/L	
			Total Sodium (Na)	2024/09/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/26	<0.020		mg/L	
			Total Sulphur (S)	2024/09/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/26	<0.10		mg/L	
			Total Barium (Ba)	2024/09/26	<0.010		mg/L	
			Total Silicon (Si)	2024/09/26	<0.50		mg/L	
			Total Boron (B)	2024/09/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/26	<0.30		mg/L	
B543199	KKC	Method Blank	Dissolved Molybdenum (Mo)	2024/09/30	<0.00020		mg/L	
B530450	DSX	RPD [CVW175-01]	Turbidity	2024/09/20	15		%	20
B531708	KHU	RPD [CVW175-07]	Dissolved Mercury (Hg)	2024/09/24	NC		%	20
B532164	HE1	RPD [CVW175-01]	Total Dissolved Solids	2024/09/24	2.5		%	20
B526827	RRA	RPD [CVW176-11]	Oil and grease	2024/09/23	NC		%	30
B528926	RRA	RPD [CVW176-11]	Total Petroleum Hydrocarbon	2024/09/24	NC		%	30
B529947	ISW	RPD [CVW176-14]	Nitrite (N)	2024/09/20	NC		%	20

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			Nitrate plus Nitrite (N)	2024/09/20	5.8		%	20
B530000	AYE	RPD [CVW176-14]	Alkalinity (Total as CaCO3)	2024/09/20	1.8		%	20
			Alkalinity (PP as CaCO3)	2024/09/20	NC		%	20
			Bicarbonate (HCO3)	2024/09/20	1.8		%	20
			Carbonate (CO3)	2024/09/20	NC		%	20
			Hydroxide (OH)	2024/09/20	NC		%	20
B530011	AYE	RPD [CVW176-14]	pH	2024/09/20	1.9		%	N/A
B530015	AYE	RPD [CVW176-14]	Conductivity	2024/09/20	0.36		%	10
B531710	KHU	RPD [CVW176-08]	Total Mercury (Hg)	2024/09/23	NC		%	20
B543199	KKC	RPD [CVW177-02]	Dissolved Molybdenum (Mo)	2024/09/30	5.0		%	20
B526827	RRA	Matrix Spike [CVW175-11]	Oil and grease	2024/09/23		91	%	70 - 130
B528926	RRA	Matrix Spike [CVW175-11]	Total Petroleum Hydrocarbon	2024/09/24		91	%	70 - 130
B529947	ISW	Matrix Spike [CVW176-14]	Nitrite (N)	2024/09/20		106	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/20		103	%	80 - 120
B531708	KHU	Matrix Spike [CVW176-07]	Dissolved Mercury (Hg)	2024/09/24		106	%	80 - 120
B532164	HE1	Matrix Spike [CVW175-01]	Total Dissolved Solids	2024/09/24		106	%	80 - 120
B543199	KKC	Matrix Spike [CVW177-02]	Dissolved Molybdenum (Mo)	2024/09/30		101	%	80 - 120
B526827	RRA	LCS	Oil and grease	2024/09/23		91	%	70 - 130
B527995	DM	LCS	D10-ANTHRACENE (sur.)	2024/09/23		108	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		111	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		70	%	50 - 130
			Acenaphthene	2024/09/23		81	%	50 - 130
			Acenaphthylene	2024/09/23		84	%	50 - 130
			Acridine	2024/09/23		87	%	50 - 130
			Anthracene	2024/09/23		84	%	50 - 130
			Benzo(a)anthracene	2024/09/23		101	%	50 - 130
			Benzo(b&j)fluoranthene	2024/09/23		97	%	50 - 130
			Benzo(k)fluoranthene	2024/09/23		93	%	50 - 130
			Benzo(g,h,i)perylene	2024/09/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/09/23		98	%	50 - 130
			Benzo(a)pyrene	2024/09/23		99	%	50 - 130
			Benzo(e)pyrene	2024/09/23		86	%	50 - 130
			Chrysene	2024/09/23		95	%	50 - 130
			Dibenz(a,h)anthracene	2024/09/23		98	%	50 - 130
			Fluoranthene	2024/09/23		102	%	50 - 130
			Fluorene	2024/09/23		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/09/23		101	%	50 - 130
			2-Methylnaphthalene	2024/09/23		70	%	50 - 130
			Naphthalene	2024/09/23		61	%	50 - 130
			Phenanthrene	2024/09/23		86	%	50 - 130
			Perylene	2024/09/23		81	%	50 - 130
			Pyrene	2024/09/23		103	%	50 - 130
			Quinoline	2024/09/23		102	%	50 - 130
			C1-Naphthalene	2024/09/23		56	%	50 - 130
			C3-Naphthalene	2024/09/23		75	%	50 - 130

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			C2-Naphthalene	2024/09/23		61	%	50 - 130
			C1-biphenyl	2024/09/23		51	%	50 - 130
			C1 phenanthrene/anthracene	2024/09/23		101	%	50 - 130
			C2 phenanthrene/anthracene	2024/09/23		102	%	50 - 130
			C1 fluoranthene/pyrene	2024/09/23		102	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/09/23		92	%	30 - 130
			1-Methylnaphthalene	2024/09/23		56	%	50 - 130
B528008	CHA	LCS	O-TERPHENYL (sur.)	2024/09/21		95	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21		89	%	60 - 140
B528926	RRA	LCS	Total Petroleum Hydrocarbon	2024/09/24		93	%	70 - 130
B529589	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/09/21		98	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		95	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		90	%	50 - 140
			Benzene	2024/09/21		84	%	60 - 130
			Toluene	2024/09/21		81	%	60 - 130
			Ethylbenzene	2024/09/21		88	%	60 - 130
			m & p-Xylene	2024/09/21		83	%	60 - 130
			o-Xylene	2024/09/21		87	%	60 - 130
			F1 (C6-C10)	2024/09/21		103	%	60 - 140
B529756	YL7	LCS	Orthophosphate (P)	2024/09/20		99	%	80 - 120
B529938	TOR	LCS	Chloride (Cl)	2024/09/20		103	%	80 - 120
			Sulphate (SO4)	2024/09/20		98	%	80 - 120
B529947	ISW	LCS	Nitrite (N)	2024/09/20		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/20		105	%	80 - 120
B530000	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/20		100	%	80 - 120
B530011	AYE	LCS	pH	2024/09/20		100	%	97 - 103
B530015	AYE	LCS	Conductivity	2024/09/20		102	%	90 - 110
B530408	KH2	LCS	Dissolved Aluminum (Al)	2024/09/21		98	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/21		99	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/21		100	%	80 - 120
			Dissolved Copper (Cu)	2024/09/21		101	%	80 - 120
			Dissolved Lead (Pb)	2024/09/21		99	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/21		102	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/21		103	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/21		101	%	80 - 120
			Dissolved Selenium (Se)	2024/09/21		106	%	80 - 120
			Dissolved Silver (Ag)	2024/09/21		101	%	80 - 120
			Dissolved Arsenic (As)	2024/09/21		101	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/21		97	%	80 - 120
			Dissolved Tin (Sn)	2024/09/21		105	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/21		96	%	80 - 120
			Dissolved Uranium (U)	2024/09/21		100	%	80 - 120
			Dissolved Vanadium (V)	2024/09/21		99	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/21		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/21		97	%	80 - 120
B530450	DSX	LCS	Turbidity	2024/09/20		101	%	80 - 120
B531283	YL7	LCS	Total Nitrogen (N)	2024/09/23		106	%	80 - 120
B531389	LYV	LCS	Total Sulphide	2024/09/22		102	%	80 - 120
B531591	SOG	LCS	Chemical Oxygen Demand	2024/09/21		100	%	80 - 120
B531702	MOP	LCS	True Colour	2024/09/21		97	%	80 - 120
B531708	KHU	LCS	Dissolved Mercury (Hg)	2024/09/24		99	%	80 - 120
B531710	KHU	LCS	Total Mercury (Hg)	2024/09/23		100	%	80 - 120

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B532052	JYU	LCS	Total Organic Carbon (C)	2024/09/23		100	%	80 - 120
B532164	HE1	LCS	Total Dissolved Solids	2024/09/24		99	%	80 - 120
B532171	TNY	LCS	Total Suspended Solids	2024/09/24		94	%	80 - 120
B532309	VSC	LCS	Dissolved Iron (Fe)	2024/09/24		110	%	80 - 120
			Dissolved Lithium (Li)	2024/09/24		103	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/24		108	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/24		109	%	80 - 120
			Dissolved Potassium (K)	2024/09/24		105	%	80 - 120
			Dissolved Sodium (Na)	2024/09/24		102	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/24		92	%	80 - 120
			Dissolved Sulphur (S)	2024/09/24		102	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/24		107	%	80 - 120
			Dissolved Barium (Ba)	2024/09/24		93	%	80 - 120
			Dissolved Silicon (Si)	2024/09/24		111	%	80 - 120
			Dissolved Boron (B)	2024/09/24		84	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/24		105	%	80 - 120
B532314	VSC	LCS	Dissolved Iron (Fe)	2024/09/24		100	%	80 - 120
			Dissolved Lithium (Li)	2024/09/24		96	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/24		99	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/24		95	%	80 - 120
			Dissolved Potassium (K)	2024/09/24		98	%	80 - 120
			Dissolved Sodium (Na)	2024/09/24		97	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/24		96	%	80 - 120
			Dissolved Sulphur (S)	2024/09/24		98	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/24		100	%	80 - 120
			Dissolved Barium (Ba)	2024/09/24		98	%	80 - 120
			Dissolved Silicon (Si)	2024/09/24		97	%	80 - 120
			Dissolved Boron (B)	2024/09/24		100	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/24		98	%	80 - 120
B532623	SBN	LCS	Total Ammonia (N)	2024/09/23		106	%	80 - 120
B533058	MDO	LCS	Dissolved Organic Carbon (C)	2024/09/23		97	%	80 - 120
B535845	KH2	LCS	Total Aluminum (Al)	2024/09/25		107	%	80 - 120
			Total Chromium (Cr)	2024/09/25		107	%	80 - 120
			Total Cobalt (Co)	2024/09/25		108	%	80 - 120
			Total Copper (Cu)	2024/09/25		109	%	80 - 120
			Total Lead (Pb)	2024/09/25		107	%	80 - 120
			Total Antimony (Sb)	2024/09/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/09/25		108	%	80 - 120
			Total Nickel (Ni)	2024/09/25		107	%	80 - 120
			Total Selenium (Se)	2024/09/25		107	%	80 - 120
			Total Silver (Ag)	2024/09/25		106	%	80 - 120
			Total Arsenic (As)	2024/09/25		111	%	80 - 120
			Total Thallium (Tl)	2024/09/25		104	%	80 - 120
			Total Tin (Sn)	2024/09/25		105	%	80 - 120
			Total Titanium (Ti)	2024/09/25		108	%	80 - 120
			Total Uranium (U)	2024/09/25		109	%	80 - 120
			Total Vanadium (V)	2024/09/25		109	%	80 - 120
			Total Zinc (Zn)	2024/09/25		108	%	80 - 120
			Total Beryllium (Be)	2024/09/25		98	%	80 - 120
B535884	VSC	LCS	Total Iron (Fe)	2024/09/25		109	%	80 - 120
			Total Lithium (Li)	2024/09/25		93	%	80 - 120
			Total Magnesium (Mg)	2024/09/25		103	%	80 - 120

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			Total Manganese (Mn)	2024/09/25		106	%	80 - 120
			Total Potassium (K)	2024/09/25		96	%	80 - 120
			Total Sodium (Na)	2024/09/25		93	%	80 - 120
			Total Strontium (Sr)	2024/09/25		95	%	80 - 120
			Total Sulphur (S)	2024/09/25		100	%	80 - 120
			Total Phosphorus (P)	2024/09/25		100	%	80 - 120
			Total Barium (Ba)	2024/09/25		95	%	80 - 120
			Total Silicon (Si)	2024/09/25		103	%	80 - 120
			Total Boron (B)	2024/09/25		94	%	80 - 120
			Total Calcium (Ca)	2024/09/25		95	%	80 - 120
B536722	KH2	LCS	Total Aluminum (Al)	2024/09/25		106	%	80 - 120
			Total Chromium (Cr)	2024/09/25		104	%	80 - 120
			Total Cobalt (Co)	2024/09/25		105	%	80 - 120
			Total Copper (Cu)	2024/09/25		105	%	80 - 120
			Total Lead (Pb)	2024/09/25		106	%	80 - 120
			Total Antimony (Sb)	2024/09/25		104	%	80 - 120
			Total Molybdenum (Mo)	2024/09/25		106	%	80 - 120
			Total Nickel (Ni)	2024/09/25		105	%	80 - 120
			Total Selenium (Se)	2024/09/25		109	%	80 - 120
			Total Silver (Ag)	2024/09/25		104	%	80 - 120
			Total Arsenic (As)	2024/09/25		107	%	80 - 120
			Total Thallium (Tl)	2024/09/25		103	%	80 - 120
			Total Tin (Sn)	2024/09/25		105	%	80 - 120
			Total Titanium (Ti)	2024/09/25		105	%	80 - 120
			Total Uranium (U)	2024/09/25		107	%	80 - 120
			Total Vanadium (V)	2024/09/25		104	%	80 - 120
			Total Zinc (Zn)	2024/09/25		106	%	80 - 120
			Total Beryllium (Be)	2024/09/25		100	%	80 - 120
B536729	IK0	LCS	Total Iron (Fe)	2024/09/26		93	%	80 - 120
			Total Lithium (Li)	2024/09/26		87	%	80 - 120
			Total Magnesium (Mg)	2024/09/26		90	%	80 - 120
			Total Manganese (Mn)	2024/09/26		95	%	80 - 120
			Total Potassium (K)	2024/09/26		92	%	80 - 120
			Total Sodium (Na)	2024/09/26		88	%	80 - 120
			Total Strontium (Sr)	2024/09/26		93	%	80 - 120
			Total Sulphur (S)	2024/09/26		90	%	80 - 120
			Total Phosphorus (P)	2024/09/26		93	%	80 - 120
			Total Barium (Ba)	2024/09/26		96	%	80 - 120
			Total Silicon (Si)	2024/09/26		89	%	80 - 120
			Total Boron (B)	2024/09/26		98	%	80 - 120
			Total Calcium (Ca)	2024/09/26		91	%	80 - 120
B543199	KKC	LCS	Dissolved Molybdenum (Mo)	2024/09/30		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
B531283	YL7	SRM	Total Nitrogen (N)	2024/09/23		104	%	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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).

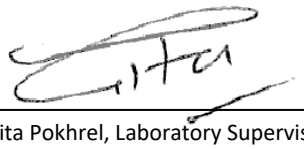
Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C474360
Report Date: 2024/10/02

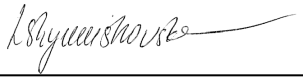
Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419-24200

VALIDATION SIGNATURE PAGE

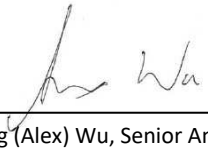
The analytical data and all QC contained in this report were reviewed and validated by:



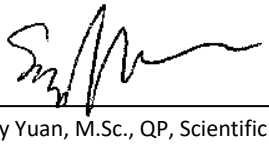
Gita Pokhrel, Laboratory Supervisor



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



Qiliang (Alex) Wu, Senior Analyst



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

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
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Automated Statchk

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VALIDATION SIGNATURE PAGE(CONT'D)

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

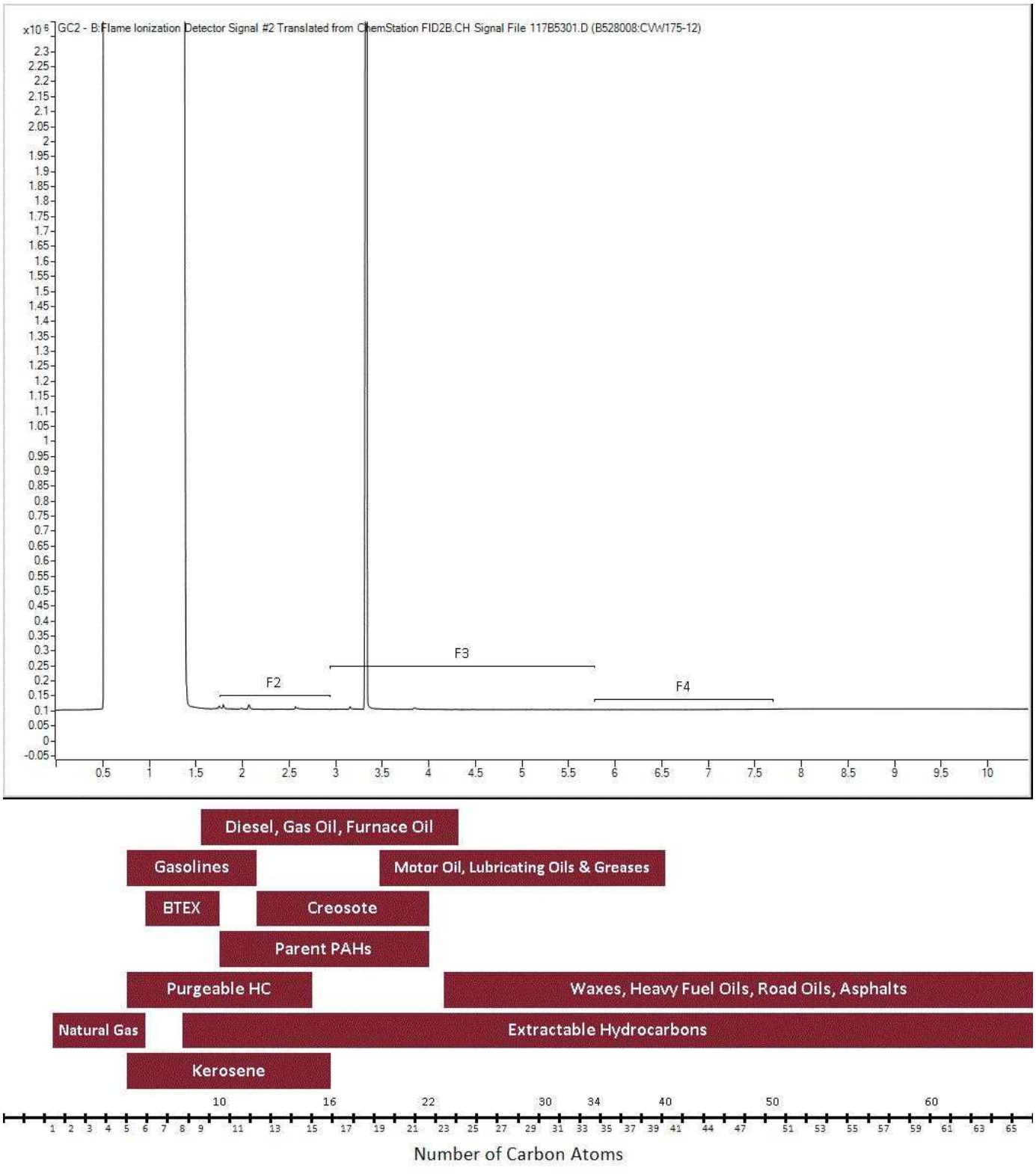
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C474360
Report Date: 2024/10/02
Bureau Veritas Sample: CVW175

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-US-01

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

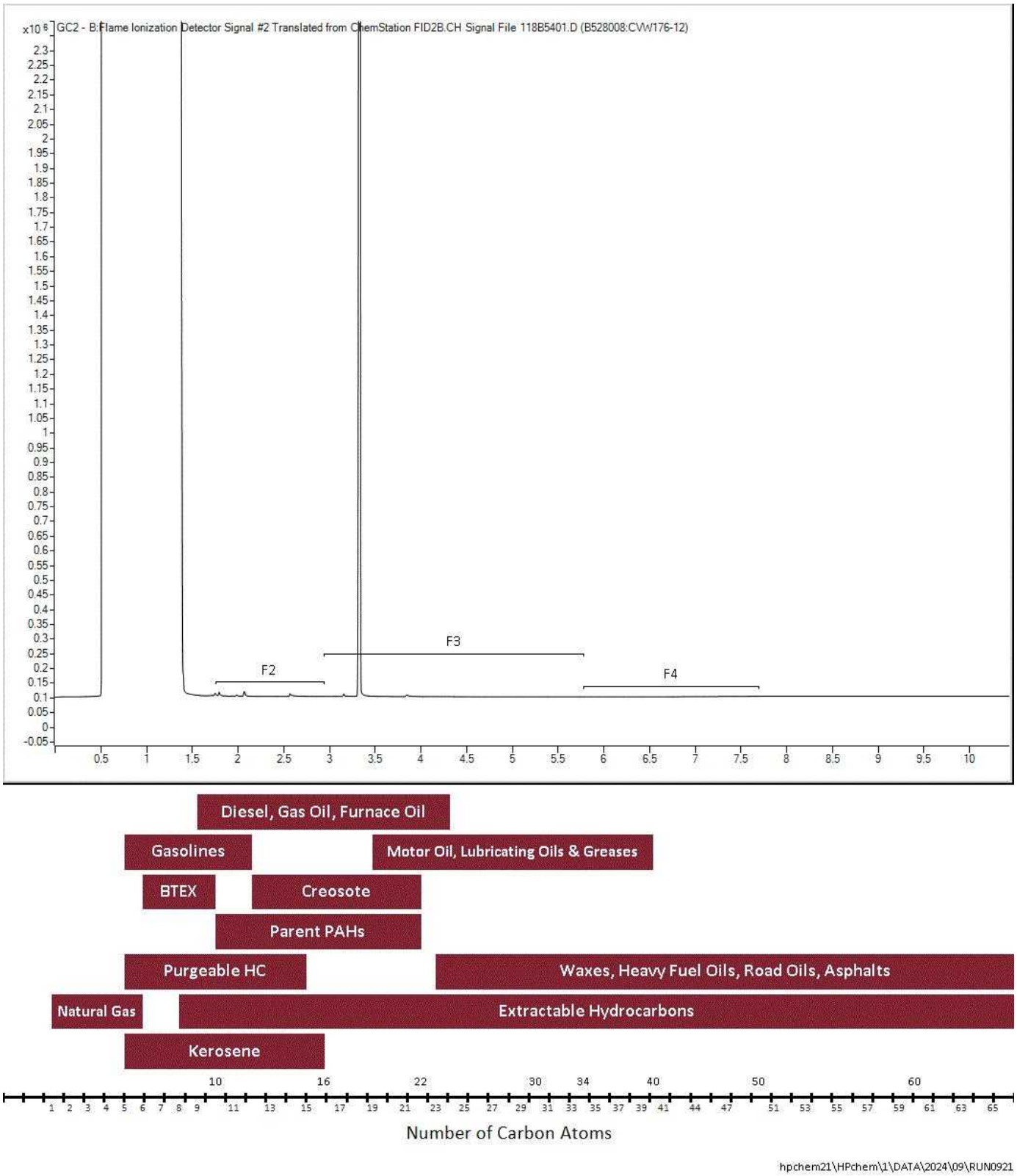


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C474360
Report Date: 2024/10/02
Bureau Veritas Sample: CVW176

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-US-02

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



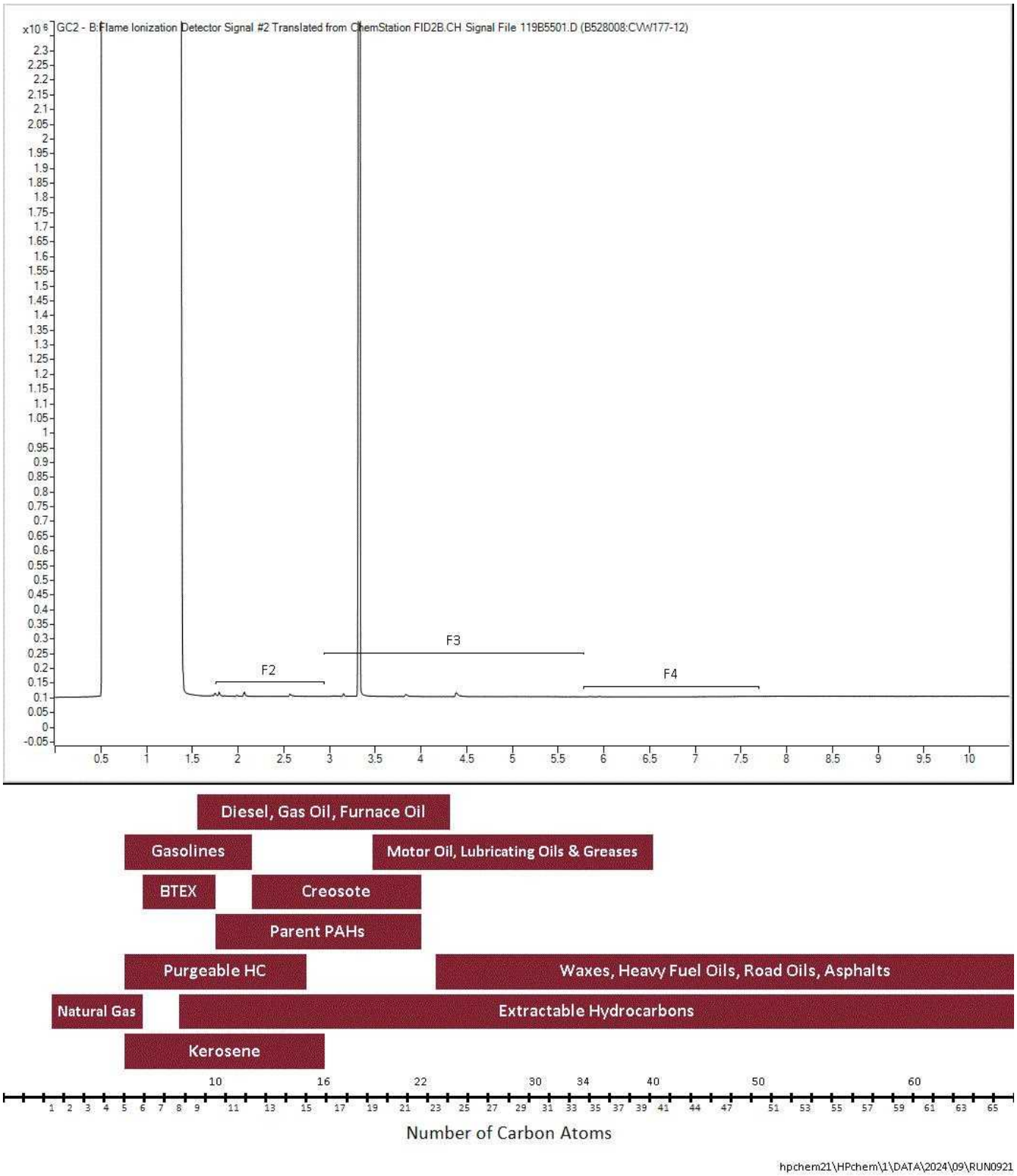
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C474360
Report Date: 2024/10/02
Bureau Veritas Sample: CVW177

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-05

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Maxxam
A Bureau Veritas Group Company

☐ Calgary
4000 19th St. NE, T2E 6P8
Phone: (403) 291-3077
Fax: (403) 735-2240
Toll Free: (800) 386-7247

☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 298625

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: ~~Worley~~ Stacy Gibb	Contact Name: Alex Haigh
Address: 4th Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 4th Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: Stacy.Gibb@worley.com	Email: alex.haigh@worley.com
Ph: 5874345393	Ph: 587 847 6244
Sampler Name (Print): Stacy Gibb, Brendan Chapman	Consultant Project #: 417085-54419, 24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED
1	AEMP-US-01		X			18	2024/09/17	13:39	X	
2	AEMP-US-02		X			18	↓	14:40	X	
3	AEMP-DS-05		X			18		11:02	X	
4										
5										
6										
7										
8										
9										
10										

ANALYSIS REQUESTED

	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Colour, TSS, TDS, Turbidity	Oil and Grease	Tot. Doc, Sulphide	Nitrate, Nitrite, Ammonia (total), TKN	Ortho phosphate	Sulphur - total + dissolved	COD	Alkylated PAH, TPH
1		X	X	~~X~~	~~X~~	~~X~~				X	X					X			X	X	X	X	X	X	X
2		X	X	~~X~~	~~X~~	~~X~~				X	X					X			X	X	X	X	X	X	X
3		X	X	~~X~~	~~X~~	~~X~~				X	X					X			X	X	X	X	X	X	X
4																									
5																									
6																									
7																									
8																									
9																									
10																									

MCAL-2024-09-1695

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419.24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: also email canada.chemistry@worley.com cacal_lowdatatrack@... IESA26014136

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

LAB USE ONLY
MAXXAM JOB #: C474360

	YES	NO	COOLER ID # MCAL	TEMP °C 1	2	3
SEAL PRESENT	✓			0.9	1.2	1.1
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID # N. CAL	TEMP °C 1	2	3
SEAL PRESENT	✓			2.2	2.1	1.3
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #	TEMP °C 1	2	3
SEAL PRESENT						
SEAL INTACT						
COOLING MEDIA PRESENT						

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1.	Alex Haigh	2024/09/18	10:00	1.	SIDJON SASSO	2024/09/19	15:10
2.				2.			
3.				3.			

SAMPLES
LABELED BY: NGS
VERIFIED BY: KLN

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 298626

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562748
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474363
Received: 2024/09/19, 15:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	3	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	3	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	3		Auto Calc
Cadmium - low level CCME - Dissolved	3		Auto Calc
Cadmium - low level CCME (Total)	3		Auto Calc
Chloride/Sulphate by Auto Colourimetry	3	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter	3	AB SOP-00016	SM 24 5220D m
True Colour	3	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1)	3	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C	3	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (2)	3	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S)	3		Auto Calc
Hardness	3		Auto Calc
Mercury (Dissolved) by CV (3)	3	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV	3	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (3)	3	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total	3	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (3)	3	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total	3	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance	3		Auto Calc
Ammonia-N (Total)	3	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite	3		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water	3	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N)	3		Auto Calc
Oil and Grease by IR	3	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (4)	3	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (5)	3		Auto Calc
pH @25°C (6)	3	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (7)	3	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide	3	AB SOP-00080	SM 24 4500 S2-A D Fm

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 298626

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562748
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474363
Received: 2024/09/19, 15:10

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue)	3	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total)	3	BBY WI-00033	Auto Calc
Nitrogen (Total)	3	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (8)	3	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease)	3	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR)	3	AB SOP-00061	SM 24 2540 D m
Turbidity	3	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(2) Silica gel clean up employed.
(3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(4) Alkylated PAH results are semiquantitative

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 298626

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/09/26
Report #: R3562748
Version: 1 - Final

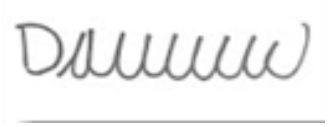
CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474363

Received: 2024/09/19, 15:10

(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(6) 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.
(7) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(8) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



Danielle Boisvert
Customer Solutions Representative
26 Sep 2024 17:46:06

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

==========

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Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CVW281	CVW282	CVW283		
Sampling Date		2024/09/17 12:08	2024/09/17 10:13	2024/09/17 11:37		
COC Number		298626	298626	298626		
	UNITS	**AEMP-DS-03**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	0.10	B528008
Volatiles						
Benzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
Toluene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
Ethylbenzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
m & p-Xylene	mg/L	<0.00080	<0.00080	<0.00080	0.00080	B529589
o-Xylene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	B529589
Xylenes (Total)	mg/L	<0.00089	<0.00089	<0.00089	0.00089	B528879
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	<0.10	0.10	B528879
F1 (C6-C10)	mg/L	<0.10	<0.10	<0.10	0.10	B529589
Extraction Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	92	92	90		B528008
Instrument Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	105	100	103		B529589
4-Bromofluorobenzene (sur.)	%	96	99	97		B529589
D4-1,2-Dichloroethane (sur.)	%	89	103	93		B529589

RDL = Reportable Detection Limit

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CVW281		CVW282	CVW283			CVW283		
Sampling Date		2024/09/17 12:08		2024/09/17 10:13	2024/09/17 11:37			2024/09/17 11:37		
COC Number		298626		298626	298626			298626		
	UNITS	**AEMP-DS-03**	**QC Batch**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**	**AEMP-DS-09 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters										
Total Total Kjeldahl Nitrogen (Calc)	mg/L	<0.20	B527777	<0.20	<0.20	0.20	B528957			
Nutrients										
Total Nitrogen (N)	mg/L	<0.20 (1)	B531283	<0.20 (1)	<0.20 (2)	0.20	B531283	<0.20	0.20	B531283

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly. Nitrogen < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent. Nitrogen < Nitrate: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVW281		CVW282	CVW283		
Sampling Date		2024/09/17 12:08		2024/09/17 10:13	2024/09/17 11:37		
COC Number		298626		298626	298626		
	UNITS	**AEMP-DS-03**	**QC Batch**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**
Elements							
Total Cadmium (Cd)	mg/L	0.00011	B528530	0.000063	0.000063	0.000020	B528530
Total Aluminum (Al)	mg/L	0.80	B536722	0.28	0.38	0.0030	B535845
Total Antimony (Sb)	mg/L	<0.00060	B536722	<0.00060	<0.00060	0.00060	B535845
Total Arsenic (As)	mg/L	0.00079	B536722	0.00058	0.00048	0.00020	B535845
Total Barium (Ba)	mg/L	0.071	B536729	0.049	0.063	0.010	B535884
Total Beryllium (Be)	mg/L	<0.0010	B536722	<0.0010	<0.0010	0.0010	B535845
Total Boron (B)	mg/L	0.025	B536729	0.021	<0.020	0.020	B535884
Total Calcium (Ca)	mg/L	47	B536729	41	50	0.30	B535884
Total Chromium (Cr)	mg/L	0.0011	B536722	<0.0010	<0.0010	0.0010	B535845
Total Cobalt (Co)	mg/L	0.00076	B536722	0.00036	0.00041	0.00030	B535845
Total Copper (Cu)	mg/L	0.0026	B536722	0.0016	0.0018	0.0010	B535845
Total Iron (Fe)	mg/L	0.95	B536729	0.32	0.45	0.060	B535884
Total Lead (Pb)	mg/L	0.00055	B536722	0.00026	0.00031	0.00020	B535845
Total Lithium (Li)	mg/L	<0.020	B536729	<0.020	<0.020	0.020	B535884
Total Magnesium (Mg)	mg/L	13	B536729	11	13	0.20	B535884
Total Manganese (Mn)	mg/L	0.026	B536729	0.010	0.024	0.0040	B535884
Total Molybdenum (Mo)	mg/L	0.0013	B536722	0.0011	0.0013	0.00020	B535845
Total Nickel (Ni)	mg/L	0.0048	B536722	0.0025	0.0034	0.00050	B535845
Total Phosphorus (P)	mg/L	<0.10	B536729	<0.10	<0.10	0.10	B535884
Total Potassium (K)	mg/L	1.3	B536729	1.2	1.3	0.30	B535884
Total Selenium (Se)	mg/L	0.00048	B536722	0.00038	0.00047	0.00020	B535845
Total Silicon (Si)	mg/L	3.3	B536729	1.8	2.1	0.50	B535884
Total Silver (Ag)	mg/L	<0.00010	B536722	<0.00010	<0.00010	0.00010	B535845
Total Sodium (Na)	mg/L	9.4	B536729	10	9.9	0.50	B535884
Total Strontium (Sr)	mg/L	0.30	B536729	0.23	0.29	0.020	B535884
Total Sulphur (S)	mg/L	21	B536729	15	20	0.20	B535884
Total Thallium (Tl)	mg/L	<0.00020	B536722	<0.00020	<0.00020	0.00020	B535845
Total Tin (Sn)	mg/L	<0.0010	B536722	<0.0010	<0.0010	0.0010	B535845
Total Titanium (Ti)	mg/L	0.020	B536722	0.0077	0.0058	0.0010	B535845
Total Uranium (U)	mg/L	0.0011	B536722	0.00092	0.0011	0.00010	B535845
Total Vanadium (V)	mg/L	0.0032	B536722	<0.0010	0.0010	0.0010	B535845
RDL = Reportable Detection Limit							

Bureau Veritas Job #: C474363
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Advisian
Task Order#: 417085-54419
Site#: N/A
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Project #: 417085-54419

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CVW281		CVW282	CVW283		
Sampling Date		2024/09/17 12:08		2024/09/17 10:13	2024/09/17 11:37		
COC Number		298626		298626	298626		
	UNITS	**AEMP-DS-03**	**QC Batch**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	0.014	B536722	0.0060	0.0069	0.0030	B535845
RDL = Reportable Detection Limit							

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW281			CVW281			CVW282		
Sampling Date		2024/09/17 12:08			2024/09/17 12:08			2024/09/17 10:13		
COC Number		298626			298626			298626		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-08**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	150	0.50	B528765				130	0.50	B528765
Ion Balance (% Difference)	%	3.1	N/A	B528962				3.7	N/A	B528962
Nitrate (N)	mg/L	0.035	0.010	B528784				0.040	0.010	B528784
Nitrate (NO3)	mg/L	0.16	0.044	B528781				0.18	0.044	B528781
Nitrite (NO2)	mg/L	<0.033	0.033	B528781				<0.033	0.033	B528781
Sulphide (as H2S)	mg/L	0.0035	0.0020	B528954				<0.0020	0.0020	B528954
Demand Parameters										
Chemical Oxygen Demand	mg/L	<10 (1)	10	B531591	10	10	B531591	<10 (1)	10	B531591
Elements										
Dissolved Cadmium (Cd)	mg/L	0.000031	0.000020	B528882				0.000030	0.000020	B528882
Misc. Inorganics										
Conductivity	uS/cm	350	2.0	B530015				300	2.0	B530015
Dissolved Organic Carbon (C)	mg/L	3.5	0.50	B536335				3.0	0.50	B533058
pH	pH	7.10	N/A	B530011				6.98	N/A	B530011
Total Organic Carbon (C)	mg/L	2.4	0.50	B536890	2.3	0.50	B536890	2.6	0.50	B532052
Total Dissolved Solids	mg/L	210	10	B532164				180	10	B532164
Total Suspended Solids	mg/L	21	1.0	B532171				9.8	1.0	B532171
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B530000				<1.0	1.0	B530000
Alkalinity (Total as CaCO3)	mg/L	110	1.0	B530000				95	1.0	B530000
Bicarbonate (HCO3)	mg/L	130	1.0	B530000				120	1.0	B530000
Carbonate (CO3)	mg/L	<1.0	1.0	B530000				<1.0	1.0	B530000
Hydroxide (OH)	mg/L	<1.0	1.0	B530000				<1.0	1.0	B530000
Total Sulphide	mg/L	0.0033	0.0018	B531389				<0.0018	0.0018	B531389
Chloride (Cl)	mg/L	9.4	1.0	B529938				9.0	1.0	B529938
Sulphate (SO4)	mg/L	61	1.0	B529938				47	1.0	B529938
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B532601				<0.015	0.015	B532601

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW281			CVW281			CVW282		
Sampling Date		2024/09/17 12:08			2024/09/17 12:08			2024/09/17 10:13		
COC Number		298626			298626			298626		
	UNITS	**AEMP-DS-03**	**RDL**	**QC Batch**	**AEMP-DS-03 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-08**	**RDL**	**QC Batch**
Orthophosphate (P)	mg/L	<0.0030	0.0030	B529756				<0.0030	0.0030	B529756
Nitrite (N)	mg/L	<0.010	0.010	B529947				<0.010	0.010	B529947
Nitrate plus Nitrite (N)	mg/L	0.035	0.010	B529947				0.040	0.010	B529947
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B526827				<2.0	2.0	B526827
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B528926				<2.0	2.0	B528926
Physical Properties										
True Colour	PtCo units	4.8	2.0	B531702				3.5	2.0	B531702
Physical Properties										
Turbidity	NTU	16	0.10	B530450				6.7	0.10	B530450

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW283			CVW283		
Sampling Date		2024/09/17 11:37			2024/09/17 11:37		
COC Number		298626			298626		
	UNITS	**AEMP-DS-09**	**RDL**	**QC Batch**	**AEMP-DS-09 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters							
Hardness (CaCO3)	mg/L	160	0.50	B528765			
Ion Balance (% Difference)	%	3.3	N/A	B528962			
Nitrate (N)	mg/L	0.032	0.010	B528784			
Nitrate (NO3)	mg/L	0.14	0.044	B528781			
Nitrite (NO2)	mg/L	<0.033	0.033	B528781			
Sulphide (as H2S)	mg/L	<0.0020	0.0020	B528954			
Demand Parameters							
Chemical Oxygen Demand	mg/L	13	10	B531591			
Elements							
Dissolved Cadmium (Cd)	mg/L	0.000026	0.000020	B528882			
Misc. Inorganics							
Conductivity	uS/cm	360	2.0	B530015			
Dissolved Organic Carbon (C)	mg/L	3.3	0.50	B533058			
pH	pH	7.22	N/A	B530011			
Total Organic Carbon (C)	mg/L	2.8	0.50	B532052			
Total Dissolved Solids	mg/L	220	10	B532164			
Total Suspended Solids	mg/L	9.9	1.0	B532171			
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B530000			
Alkalinity (Total as CaCO3)	mg/L	110	1.0	B530000			
Bicarbonate (HCO3)	mg/L	130	1.0	B530000			
Carbonate (CO3)	mg/L	<1.0	1.0	B530000			
Hydroxide (OH)	mg/L	<1.0	1.0	B530000			
Total Sulphide	mg/L	<0.0018	0.0018	B531389			
Chloride (Cl)	mg/L	9.2	1.0	B529940	9.6	1.0	B529940
Sulphate (SO4)	mg/L	62	1.0	B529940	62	1.0	B529940
Nutrients							
Total Ammonia (N)	mg/L	0.023	0.015	B532623			
Orthophosphate (P)	mg/L	<0.0030	0.0030	B529756			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CVW283			CVW283		
Sampling Date		2024/09/17 11:37			2024/09/17 11:37		
COC Number		298626			298626		
	UNITS	**AEMP-DS-09**	**RDL**	**QC Batch**	**AEMP-DS-09 Lab-Dup**	**RDL**	**QC Batch**
Nitrite (N)	mg/L	<0.010	0.010	B529947			
Nitrate plus Nitrite (N)	mg/L	0.032	0.010	B529947			
Misc. Organics							
Oil and grease	mg/L	<2.0	2.0	B526827			
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B528926			
Physical Properties							
True Colour	PtCo units	5.1	2.0	B531702			
Physical Properties							
Turbidity	NTU	8.3	0.10	B530450			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVW281	CVW282	CVW283		
Sampling Date		2024/09/17 12:08	2024/09/17 10:13	2024/09/17 11:37		
COC Number		298626	298626	298626		
	UNITS	**AEMP-DS-03**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	<0.000010	0.000010	B528607
Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Acridine	ug/L	<0.040	<0.040	<0.040	0.040	B527995
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	B527995
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
Benzo(e)pyrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
Fluoranthene	ug/L	<0.010	<0.010	<0.010	0.010	B527995
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Perylene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
Quinoline	ug/L	<0.20	<0.20	<0.20	0.20	B527995
Retene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C1-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
C3-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
C4-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
C2-Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
RDL = Reportable Detection Limit						

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CVW281	CVW282	CVW283		
Sampling Date		2024/09/17 12:08	2024/09/17 10:13	2024/09/17 11:37		
COC Number		298626	298626	298626		
	UNITS	**AEMP-DS-03**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**
C2-biphenyl	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C2-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C3-fluorene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
Dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C2-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C3-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C4-dibenzothiophene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	<0.050	0.050	B527995
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	<0.020	0.020	B527995
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	B527995
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	B527995
C1-Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
1-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	B527995
Extraction Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	114	110	100		B527995
D8-ACENAPHTHYLENE (sur.)	%	76	89	79		B527995
D8-NAPHTHALENE (sur.)	%	59	67	73		B527995
TERPHENYL-D14 (sur.)	%	119	115	105		B527995
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CVW281	CVW282	CVW283		
Sampling Date		2024/09/17 12:08	2024/09/17 10:13	2024/09/17 11:37		
COC Number		298626	298626	298626		
	UNITS	**AEMP-DS-03**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**
Elements						
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	B531708
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	<0.0019	0.0019	B531710
RDL = Reportable Detection Limit						

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CVW281		CVW282	CVW283		
Sampling Date		2024/09/17 12:08		2024/09/17 10:13	2024/09/17 11:37		
COC Number		298626		298626	298626		
	UNITS	**AEMP-DS-03**	**QC Batch**	**AEMP-DS-08**	**AEMP-DS-09**	**RDL**	**QC Batch**
Elements							
Dissolved Aluminum (Al)	mg/L	0.060	B530408	0.051	0.053	0.0030	B530419
Dissolved Antimony (Sb)	mg/L	<0.00060	B530408	<0.00060	<0.00060	0.00060	B530419
Dissolved Arsenic (As)	mg/L	0.00028	B530408	0.00033	0.00027	0.00020	B530419
Dissolved Barium (Ba)	mg/L	0.047	B532309	0.043	0.051	0.010	B532394
Dissolved Beryllium (Be)	mg/L	<0.0010	B530408	<0.0010	<0.0010	0.0010	B530419
Dissolved Boron (B)	mg/L	<0.020	B532309	<0.020	<0.020	0.020	B532394
Dissolved Calcium (Ca)	mg/L	40	B532309	34	42	0.30	B532394
Dissolved Chromium (Cr)	mg/L	<0.0010	B530408	<0.0010	<0.0010	0.0010	B530419
Dissolved Cobalt (Co)	mg/L	<0.00030	B530408	<0.00030	<0.00030	0.00030	B530419
Dissolved Copper (Cu)	mg/L	<0.0010	B530408	0.0013	0.0016	0.0010	B530419
Dissolved Iron (Fe)	mg/L	<0.060	B532309	<0.060	<0.060	0.060	B532394
Dissolved Lead (Pb)	mg/L	<0.00020	B530408	<0.00020	<0.00020	0.00020	B530419
Dissolved Lithium (Li)	mg/L	<0.020	B532309	<0.020	<0.020	0.020	B532394
Dissolved Magnesium (Mg)	mg/L	13	B532309	10	13	0.20	B532394
Dissolved Manganese (Mn)	mg/L	<0.0040	B532309	<0.0040	<0.0040	0.0040	B532394
Dissolved Molybdenum (Mo)	mg/L	0.0010	B530408	0.00087	0.0011	0.00020	B530419
Dissolved Nickel (Ni)	mg/L	0.0019	B530408	0.0015	0.0020	0.00050	B530419
Dissolved Phosphorus (P)	mg/L	<0.10	B532309	<0.10	<0.10	0.10	B532394
Dissolved Potassium (K)	mg/L	0.89	B532309	0.90	0.96	0.30	B532394
Dissolved Selenium (Se)	mg/L	0.00038	B530408	0.00032	0.00045	0.00020	B530419
Dissolved Silicon (Si)	mg/L	1.6	B532309	1.4	1.6	0.50	B532394
Dissolved Silver (Ag)	mg/L	<0.00010	B530408	<0.00010	<0.00010	0.00010	B530419
Dissolved Sodium (Na)	mg/L	8.3	B532309	8.4	8.5	0.50	B532394
Dissolved Strontium (Sr)	mg/L	0.25	B532309	0.22	0.27	0.020	B532394
Dissolved Sulphur (S)	mg/L	20	B532309	15	20	0.20	B532394
Dissolved Thallium (Tl)	mg/L	<0.00020	B530408	<0.00020	<0.00020	0.00020	B530419
Dissolved Tin (Sn)	mg/L	<0.0010	B530408	<0.0010	<0.0010	0.0010	B530419
Dissolved Titanium (Ti)	mg/L	<0.0010	B530408	<0.0010	<0.0010	0.0010	B530419
Dissolved Uranium (U)	mg/L	0.00083	B530408	0.00071	0.00082	0.00010	B530419
Dissolved Vanadium (V)	mg/L	<0.0010	B530408	<0.0010	<0.0010	0.0010	B530419
Dissolved Zinc (Zn)	mg/L	<0.0030	B530408	0.0040	0.0046	0.0030	B530419
RDL = Reportable Detection Limit							

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CVW281
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B530000	N/A	2024/09/21	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B529589	N/A	2024/09/21	Richard Ly
F1-BTEX	CALC/MS	B528879	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B528882	N/A	2024/09/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B528530	N/A	2024/09/26	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B529938	N/A	2024/09/20	Tyler Orr
COD by Colorimeter	M/PROB	B531591	N/A	2024/09/21	Santiago Rios Origgi
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B536335	N/A	2024/09/25	Jill Yuen
Conductivity @25C	COND	B530015	N/A	2024/09/21	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B528954	N/A	2024/09/23	Automated Statchk
Hardness	CALC	B528765	N/A	2024/09/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B531708	2024/09/21	2024/09/24	Kevin Hung
Mercury (Total) by CV	CV	B531710	2024/09/21	2024/09/23	Kevin Hung
Elements by ICP - Dissolved	ICPA	B532309	N/A	2024/09/24	Vincy Scaria
Elements by ICP - Total	ICPA	B536729	2024/09/25	2024/09/26	Ilonka Kovac
Elements by ICPMS - Dissolved	ICPM	B530408	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B536722	2024/09/25	2024/09/25	Kevin Huang
Ion Balance	CALC	B528962	N/A	2024/09/25	Automated Statchk
Ammonia-N (Total)	KONE	B532601	N/A	2024/09/23	Sana Baban
Nitrate and Nitrite	CALC	B528781	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B529947	N/A	2024/09/20	Isabelle White
Nitrate (as N)	CALC	B528784	2024/09/23	2024/09/23	Automated Statchk
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/20	2024/09/23	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B528607	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B530011	N/A	2024/09/21	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B529756	N/A	2024/09/20	Yan Lin
Total Sulphide	SPEC	B531389	N/A	2024/09/22	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B532164	2024/09/23	2024/09/24	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B527777	N/A	2024/09/24	Automated Statchk
Nitrogen (Total)	AC/COL	B531283	2024/09/21	2024/09/23	Yan Lin
Carbon (Total Organic)	TECH	B536890	N/A	2024/09/25	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B532171	2024/09/23	2024/09/24	Thi Boi Tran Nguyen
Turbidity	TURB	B530450	N/A	2024/09/20	Dafne Strozake Maximo

Bureau Veritas ID: CVW281 Dup
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
COD by Colorimeter	M/PROB	B531591	N/A	2024/09/21	Santiago Rios Origgi

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CVW281 Dup
Sample ID: AEMP-DS-03
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbon (Total Organic)	TECH	B536890	N/A	2024/09/25	Jill Yuen

Bureau Veritas ID: CVW282
Sample ID: AEMP-DS-08
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B530000	N/A	2024/09/21	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B529589	N/A	2024/09/21	Richard Ly
F1-BTEX	CALC/MS	B528879	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B528882	N/A	2024/09/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B528530	N/A	2024/09/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B529938	N/A	2024/09/20	Tyler Orr
COD by Colorimeter	M/PROB	B531591	N/A	2024/09/21	Santiago Rios Origgi
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B533058	N/A	2024/09/23	Ming Dong
Conductivity @25C	COND	B530015	N/A	2024/09/21	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B528954	N/A	2024/09/23	Automated Statchk
Hardness	CALC	B528765	N/A	2024/09/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B531708	2024/09/21	2024/09/24	Kevin Hung
Mercury (Total) by CV	CV	B531710	2024/09/21	2024/09/23	Kevin Hung
Elements by ICP - Dissolved	ICPA	B532394	N/A	2024/09/24	Vincy Scaria
Elements by ICP - Total	ICPA	B535884	2024/09/25	2024/09/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B530419	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B535845	2024/09/25	2024/09/25	Kevin Huang
Ion Balance	CALC	B528962	N/A	2024/09/25	Automated Statchk
Ammonia-N (Total)	KONE	B532601	N/A	2024/09/23	Sana Baban
Nitrate and Nitrite	CALC	B528781	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B529947	N/A	2024/09/20	Isabelle White
Nitrate (as N)	CALC	B528784	2024/09/23	2024/09/23	Automated Statchk
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/20	2024/09/24	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B528607	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B530011	N/A	2024/09/21	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B529756	N/A	2024/09/20	Yan Lin
Total Sulphide	SPEC	B531389	N/A	2024/09/22	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B532164	2024/09/23	2024/09/24	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B528957	N/A	2024/09/24	Automated Statchk
Nitrogen (Total)	AC/COL	B531283	2024/09/21	2024/09/23	Yan Lin
Carbon (Total Organic)	TECH	B532052	N/A	2024/09/23	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B532171	2024/09/23	2024/09/24	Thi Boi Tran Nguyen
Turbidity	TURB	B530450	N/A	2024/09/20	Dafne Strozake Maximo

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CVW283
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B530000	N/A	2024/09/21	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B529589	N/A	2024/09/21	Richard Ly
F1-BTEX	CALC/MS	B528879	N/A	2024/09/22	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B528882	N/A	2024/09/21	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B528530	N/A	2024/09/25	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B529940	N/A	2024/09/20	Hirushi Kanewala-Appuhamilage
COD by Colorimeter	M/PROB	B531591	N/A	2024/09/21	Santiago Rios Origgi
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B533058	N/A	2024/09/23	Ming Dong
Conductivity @25C	COND	B530015	N/A	2024/09/21	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B528008	2024/09/21	2024/09/22	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B528954	N/A	2024/09/23	Automated Statchk
Hardness	CALC	B528765	N/A	2024/09/25	Automated Statchk
Mercury (Dissolved) by CV	CV	B531708	2024/09/21	2024/09/24	Kevin Hung
Mercury (Total) by CV	CV	B531710	2024/09/21	2024/09/23	Kevin Hung
Elements by ICP - Dissolved	ICPA	B532394	N/A	2024/09/24	Vincy Scaria
Elements by ICP - Total	ICPA	B535884	2024/09/25	2024/09/25	Vincy Scaria
Elements by ICPMS - Dissolved	ICPM	B530419	N/A	2024/09/20	Kevin Huang
Elements by ICPMS - Total	ICPM	B535845	2024/09/25	2024/09/25	Kevin Huang
Ion Balance	CALC	B528962	N/A	2024/09/25	Automated Statchk
Ammonia-N (Total)	KONE	B532623	N/A	2024/09/23	Sana Baban
Nitrate and Nitrite	CALC	B528781	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B529947	N/A	2024/09/20	Isabelle White
Nitrate (as N)	CALC	B528784	2024/09/23	2024/09/23	Automated Statchk
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B527995	2024/09/20	2024/09/24	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B528607	N/A	2024/09/26	Automated Statchk
pH @25°C	AT/ALK	B530011	N/A	2024/09/21	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B529756	N/A	2024/09/20	Yan Lin
Total Sulphide	SPEC	B531389	N/A	2024/09/22	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B532164	2024/09/23	2024/09/24	Haydee Estilong
Total Kjeldahl Nitrogen (Total)	CALC	B528957	N/A	2024/09/24	Automated Statchk
Nitrogen (Total)	AC/COL	B531283	2024/09/21	2024/09/23	Yan Lin
Carbon (Total Organic)	TECH	B532052	N/A	2024/09/23	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B532171	2024/09/23	2024/09/24	Thi Boi Tran Nguyen
Turbidity	TURB	B530450	N/A	2024/09/20	Dafne Strozake Maximo

Bureau Veritas ID: CVW283 Dup
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride/Sulphate by Auto Colourimetry	KONE	B529940	N/A	2024/09/20	Hirushi Kanewala-Appuhamilage

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Bureau Veritas Job #: C474363
Report Date: 2024/09/26

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CVW283 Dup
Sample ID: AEMP-DS-09
Matrix: Water

Collected: 2024/09/17
Relinquished: 2024/09/18
Received: 2024/09/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Nitrogen (Total)	AC/COL	B531283	2024/09/21	2024/09/23	Yan Lin

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GENERAL COMMENTS

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

Package 1	1.1°C
Package 2	1.9°C

Sample CVW281 [AEMP-DS-03] : Sample was analyzed past method specified hold time for True Colour. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample CVW282 [AEMP-DS-08] : Sample was analyzed past method specified hold time for True Colour. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample CVW283 [AEMP-DS-09] : Sample was analyzed past method specified hold time for True Colour. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Results relate only to the items tested.

DATA QUALITY OVERVIEW

Lab ID	Client Sample ID	Matrix	Test Code	Analysis Type	Parameters	Deviation	Root Cause	Potential Impact
CVW281	AEMP-DS-03	Water	COLOURT-W	PHYS	Sample	#10 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CVW282	AEMP-DS-08	Water	COLOURT-W	PHYS	Sample	#10 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.
CVW283	AEMP-DS-09	Water	COLOURT-W	PHYS	Sample	#10 Past Hold Time	#10 Lab Error	This may increase the uncertainty associated with these results.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B526827	RRA	Method Blank	Oil and grease	2024/09/23	<2.0		mg/L	
B527995	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/09/23		103	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		107	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		86	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		68	%	50 - 130
			Acenaphthene	2024/09/23	<0.10		ug/L	
			Acenaphthylene	2024/09/23	<0.10		ug/L	
			Acridine	2024/09/23	<0.040		ug/L	
			Anthracene	2024/09/23	<0.010		ug/L	
			Benzo(a)anthracene	2024/09/23	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/09/23	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/09/23	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/09/23	<0.050		ug/L	
			Benzo(a)pyrene	2024/09/23	<0.0075		ug/L	
			Benzo(e)pyrene	2024/09/23	<0.050		ug/L	
			Chrysene	2024/09/23	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/09/23	<0.0075		ug/L	
			Fluoranthene	2024/09/23	<0.010		ug/L	
			Fluorene	2024/09/23	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/09/23	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/09/23	<0.0085		ug/L	
			2-Methylnaphthalene	2024/09/23	<0.10		ug/L	
			Naphthalene	2024/09/23	<0.10		ug/L	
			Phenanthrene	2024/09/23	<0.050		ug/L	
			Perylene	2024/09/23	<0.050		ug/L	
			Pyrene	2024/09/23	<0.020		ug/L	
			Quinoline	2024/09/23	<0.20		ug/L	
			Retene	2024/09/23	<0.050		ug/L	
			C1-Naphthalene	2024/09/23	<0.10		ug/L	
			C3-Naphthalene	2024/09/23	<0.10		ug/L	
			C4-Naphthalene	2024/09/23	<0.10		ug/L	
			C2-Naphthalene	2024/09/23	<0.10		ug/L	
			Biphenyl	2024/09/23	<0.020		ug/L	
			C1-biphenyl	2024/09/23	<0.020		ug/L	
			C2-biphenyl	2024/09/23	<0.020		ug/L	
			C1-fluorene	2024/09/23	<0.050		ug/L	
			C2-fluorene	2024/09/23	<0.050		ug/L	
			C3-fluorene	2024/09/23	<0.050		ug/L	
			Dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C2-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C3-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C4-dibenzothiophene	2024/09/23	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/09/23	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/09/23	<0.020		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			C1 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/09/23	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/09/23	<0.0075		ug/L	
			C1-Acenaphthene	2024/09/23	<0.10		ug/L	
			1-Methylnaphthalene	2024/09/23	<0.10		ug/L	
B528008	CHA	Method Blank	O-TERPHENYL (sur.)	2024/09/21		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21	<0.10		mg/L	
B528926	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/09/24	<2.0		mg/L	
B529589	RIL	Method Blank	1,4-Difluorobenzene (sur.)	2024/09/21		104	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		93	%	50 - 140
			Benzene	2024/09/21	<0.00040		mg/L	
			Toluene	2024/09/21	<0.00040		mg/L	
			Ethylbenzene	2024/09/21	<0.00040		mg/L	
			m & p-Xylene	2024/09/21	<0.00080		mg/L	
			o-Xylene	2024/09/21	<0.00040		mg/L	
			F1 (C6-C10)	2024/09/21	<0.10		mg/L	
B529756	YL7	Method Blank	Orthophosphate (P)	2024/09/20	<0.0030		mg/L	
B529938	TOR	Method Blank	Chloride (Cl)	2024/09/20	<1.0		mg/L	
			Sulphate (SO4)	2024/09/20	<1.0		mg/L	
B529940	HAP	Method Blank	Chloride (Cl)	2024/09/20	<1.0		mg/L	
			Sulphate (SO4)	2024/09/20	<1.0		mg/L	
B529947	ISW	Method Blank	Nitrite (N)	2024/09/20	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/20	<0.010		mg/L	
B530000	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/20	<1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/20	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/20	<1.0		mg/L	
			Carbonate (CO3)	2024/09/20	<1.0		mg/L	
			Hydroxide (OH)	2024/09/20	<1.0		mg/L	
B530015	AYE	Method Blank	Conductivity	2024/09/20	<2.0		uS/cm	
B530408	KH2	Method Blank	Dissolved Aluminum (Al)	2024/09/20	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/09/20	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/09/20	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/09/20	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/09/20	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/09/20	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/09/20	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/09/20	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/09/20	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/09/20	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/09/20	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/09/20	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/09/20	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/09/20	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/09/20	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/09/20	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/09/20	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/09/20	<0.0010		mg/L	
B530419	KH2	Method Blank	Dissolved Aluminum (Al)	2024/09/20	<0.0030		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Chromium (Cr)	2024/09/20	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/09/20	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/09/20	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/09/20	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/09/20	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/09/20	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/09/20	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/09/20	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/09/20	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/09/20	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/09/20	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/09/20	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/09/20	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/09/20	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/09/20	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/09/20	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/09/20	<0.0010		mg/L	
B530450	DSX	Method Blank	Turbidity	2024/09/20	<0.10		NTU	
B531283	YL7	Method Blank	Total Nitrogen (N)	2024/09/23	<0.020		mg/L	
B531389	LYV	Method Blank	Total Sulphide	2024/09/22	<0.0018		mg/L	
B531591	SOG	Method Blank	Chemical Oxygen Demand	2024/09/21	<10		mg/L	
B531702	MOP	Method Blank	True Colour	2024/09/21	<2.0		PtCo units	
B531708	KHU	Method Blank	Dissolved Mercury (Hg)	2024/09/24	<0.0019		ug/L	
B531710	KHU	Method Blank	Total Mercury (Hg)	2024/09/23	<0.0019		ug/L	
B532052	JYU	Method Blank	Total Organic Carbon (C)	2024/09/23	<0.50		mg/L	
B532164	HE1	Method Blank	Total Dissolved Solids	2024/09/24	<10		mg/L	
B532171	TNY	Method Blank	Total Suspended Solids	2024/09/24	<1.0		mg/L	
B532309	VSC	Method Blank	Dissolved Iron (Fe)	2024/09/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/24	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/24	<0.30		mg/L	
B532394	VSC	Method Blank	Dissolved Iron (Fe)	2024/09/24	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/24	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/24	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/24	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/24	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/24	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/24	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/24	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/24	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/24	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/24	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/24	<0.020		mg/L	

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			Dissolved Calcium (Ca)	2024/09/24	<0.30		mg/L	
B532601	SBN	Method Blank	Total Ammonia (N)	2024/09/23	<0.015		mg/L	
B532623	SBN	Method Blank	Total Ammonia (N)	2024/09/23	<0.015		mg/L	
B533058	MDO	Method Blank	Dissolved Organic Carbon (C)	2024/09/23	<0.50		mg/L	
B535845	KH2	Method Blank	Total Aluminum (Al)	2024/09/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/25	<0.0010		mg/L	
			Total Uranium (U)	2024/09/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/25	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/25	<0.0010		mg/L	
B535884	VSC	Method Blank	Total Iron (Fe)	2024/09/25	<0.060		mg/L	
			Total Lithium (Li)	2024/09/25	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/25	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/25	<0.0040		mg/L	
			Total Potassium (K)	2024/09/25	<0.30		mg/L	
			Total Sodium (Na)	2024/09/25	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/25	<0.020		mg/L	
			Total Sulphur (S)	2024/09/25	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/25	<0.10		mg/L	
			Total Barium (Ba)	2024/09/25	<0.010		mg/L	
			Total Silicon (Si)	2024/09/25	<0.50		mg/L	
			Total Boron (B)	2024/09/25	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/25	<0.30		mg/L	
B536335	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/09/25	<0.50		mg/L	
B536722	KH2	Method Blank	Total Aluminum (Al)	2024/09/25	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/25	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/25	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/25	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/25	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/25	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/25	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/25	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/25	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/25	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/25	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/25	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/25	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/25	<0.0010		mg/L	
			Total Uranium (U)	2024/09/25	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/25	<0.0010		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Zinc (Zn)	2024/09/25	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/25	<0.0010		mg/L	
B536729	IK0	Method Blank	Total Iron (Fe)	2024/09/26	<0.060		mg/L	
			Total Lithium (Li)	2024/09/26	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/26	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/26	<0.0040		mg/L	
			Total Potassium (K)	2024/09/26	<0.30		mg/L	
			Total Sodium (Na)	2024/09/26	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/26	<0.020		mg/L	
			Total Sulphur (S)	2024/09/26	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/26	<0.10		mg/L	
			Total Barium (Ba)	2024/09/26	<0.010		mg/L	
			Total Silicon (Si)	2024/09/26	<0.50		mg/L	
			Total Boron (B)	2024/09/26	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/26	<0.30		mg/L	
B536890	JYU	Method Blank	Total Organic Carbon (C)	2024/09/25	<0.50		mg/L	
B531591	SOG	RPD [CVW281-05]	Chemical Oxygen Demand	2024/09/21	1.1		%	20
B536890	JYU	RPD [CVW281-05]	Total Organic Carbon (C)	2024/09/25	2.5		%	20
B529940	HAP	RPD [CVW283-14]	Chloride (Cl)	2024/09/20	4.7		%	20
			Sulphate (SO4)	2024/09/20	0.096		%	20
B531283	YL7	RPD [CVW283-05]	Total Nitrogen (N)	2024/09/23	NC		%	20
B529940	HAP	Matrix Spike [CVW283-14]	Chloride (Cl)	2024/09/20		100	%	80 - 120
			Sulphate (SO4)	2024/09/20		89	%	80 - 120
B531283	YL7	Matrix Spike [CVW283-05]	Total Nitrogen (N)	2024/09/23		111	%	80 - 120
B531591	SOG	Matrix Spike [CVW281-05]	Chemical Oxygen Demand	2024/09/21		116	%	80 - 120
B536890	JYU	Matrix Spike [CVW281-05]	Total Organic Carbon (C)	2024/09/25		92	%	75 - 125
B526827	RRA	LCS	Oil and grease	2024/09/23		91	%	70 - 130
B527995	DM	LCS	D10-ANTHRACENE (sur.)	2024/09/23		108	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/23		111	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/23		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/23		70	%	50 - 130
			Acenaphthene	2024/09/23		81	%	50 - 130
			Acenaphthylene	2024/09/23		84	%	50 - 130
			Acridine	2024/09/23		87	%	50 - 130
			Anthracene	2024/09/23		84	%	50 - 130
			Benzo(a)anthracene	2024/09/23		101	%	50 - 130
			Benzo(b&j)fluoranthene	2024/09/23		97	%	50 - 130
			Benzo(k)fluoranthene	2024/09/23		93	%	50 - 130
			Benzo(g,h,i)perylene	2024/09/23		90	%	50 - 130
			Benzo(c)phenanthrene	2024/09/23		98	%	50 - 130
			Benzo(a)pyrene	2024/09/23		99	%	50 - 130
			Benzo(e)pyrene	2024/09/23		86	%	50 - 130
			Chrysene	2024/09/23		95	%	50 - 130
			Dibenz(a,h)anthracene	2024/09/23		98	%	50 - 130
			Fluoranthene	2024/09/23		102	%	50 - 130
			Fluorene	2024/09/23		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/09/23		101	%	50 - 130
			2-Methylnaphthalene	2024/09/23		70	%	50 - 130

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			Naphthalene	2024/09/23		61	%	50 - 130
			Phenanthrene	2024/09/23		86	%	50 - 130
			Perylene	2024/09/23		81	%	50 - 130
			Pyrene	2024/09/23		103	%	50 - 130
			Quinoline	2024/09/23		102	%	50 - 130
			C1-Naphthalene	2024/09/23		56	%	50 - 130
			C3-Naphthalene	2024/09/23		75	%	50 - 130
			C2-Naphthalene	2024/09/23		61	%	50 - 130
			C1-biphenyl	2024/09/23		51	%	50 - 130
			C1 phenanthrene/anthracene	2024/09/23		101	%	50 - 130
			C2 phenanthrene/anthracene	2024/09/23		102	%	50 - 130
			C1 fluoranthene/pyrene	2024/09/23		102	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/09/23		92	%	30 - 130
			1-Methylnaphthalene	2024/09/23		56	%	50 - 130
B528008	CHA	LCS	O-TERPHENYL (sur.)	2024/09/21		95	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/21		89	%	60 - 140
B528926	RRA	LCS	Total Petroleum Hydrocarbon	2024/09/24		93	%	70 - 130
B529589	RIL	LCS	1,4-Difluorobenzene (sur.)	2024/09/21		98	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/21		95	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/21		90	%	50 - 140
			Benzene	2024/09/21		84	%	60 - 130
			Toluene	2024/09/21		81	%	60 - 130
			Ethylbenzene	2024/09/21		88	%	60 - 130
			m & p-Xylene	2024/09/21		83	%	60 - 130
			o-Xylene	2024/09/21		87	%	60 - 130
			F1 (C6-C10)	2024/09/21		103	%	60 - 140
B529756	YL7	LCS	Orthophosphate (P)	2024/09/20		99	%	80 - 120
B529938	TOR	LCS	Chloride (Cl)	2024/09/20		103	%	80 - 120
			Sulphate (SO4)	2024/09/20		98	%	80 - 120
B529940	HAP	LCS	Chloride (Cl)	2024/09/20		99	%	80 - 120
			Sulphate (SO4)	2024/09/20		100	%	80 - 120
B529947	ISW	LCS	Nitrite (N)	2024/09/20		101	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/20		105	%	80 - 120
B530000	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/20		100	%	80 - 120
B530011	AYE	LCS	pH	2024/09/20		100	%	97 - 103
B530015	AYE	LCS	Conductivity	2024/09/20		102	%	90 - 110
B530408	KH2	LCS	Dissolved Aluminum (Al)	2024/09/21		98	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/21		99	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/21		100	%	80 - 120
			Dissolved Copper (Cu)	2024/09/21		101	%	80 - 120
			Dissolved Lead (Pb)	2024/09/21		99	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/21		102	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/21		103	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/21		101	%	80 - 120
			Dissolved Selenium (Se)	2024/09/21		106	%	80 - 120
			Dissolved Silver (Ag)	2024/09/21		101	%	80 - 120
			Dissolved Arsenic (As)	2024/09/21		101	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/21		97	%	80 - 120
			Dissolved Tin (Sn)	2024/09/21		105	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/21		96	%	80 - 120
			Dissolved Uranium (U)	2024/09/21		100	%	80 - 120
			Dissolved Vanadium (V)	2024/09/21		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 Zinc (Zn)	2024/09/21		100	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/21		97	%	80 - 120
B530419	KH2	LCS	Dissolved Aluminum (Al)	2024/09/20		102	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/20		95	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/20		96	%	80 - 120
			Dissolved Copper (Cu)	2024/09/20		96	%	80 - 120
			Dissolved Lead (Pb)	2024/09/20		97	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/20		107	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/20		106	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/20		95	%	80 - 120
			Dissolved Selenium (Se)	2024/09/20		107	%	80 - 120
			Dissolved Silver (Ag)	2024/09/20		98	%	80 - 120
			Dissolved Arsenic (As)	2024/09/20		105	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/20		96	%	80 - 120
			Dissolved Tin (Sn)	2024/09/20		103	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/20		96	%	80 - 120
			Dissolved Uranium (U)	2024/09/20		96	%	80 - 120
			Dissolved Vanadium (V)	2024/09/20		97	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/20		104	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/20		100	%	80 - 120
B530450	DSX	LCS	Turbidity	2024/09/20		101	%	80 - 120
B531283	YL7	LCS	Total Nitrogen (N)	2024/09/23		106	%	80 - 120
B531389	LYV	LCS	Total Sulphide	2024/09/22		102	%	80 - 120
B531591	SOG	LCS	Chemical Oxygen Demand	2024/09/21		100	%	80 - 120
B531702	MOP	LCS	True Colour	2024/09/21		97	%	80 - 120
B531708	KHU	LCS	Dissolved Mercury (Hg)	2024/09/24		99	%	80 - 120
B531710	KHU	LCS	Total Mercury (Hg)	2024/09/23		100	%	80 - 120
B532052	JYU	LCS	Total Organic Carbon (C)	2024/09/23		100	%	80 - 120
B532164	HE1	LCS	Total Dissolved Solids	2024/09/24		99	%	80 - 120
B532171	TNY	LCS	Total Suspended Solids	2024/09/24		94	%	80 - 120
B532309	VSC	LCS	Dissolved Iron (Fe)	2024/09/24		110	%	80 - 120
			Dissolved Lithium (Li)	2024/09/24		103	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/24		108	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/24		109	%	80 - 120
			Dissolved Potassium (K)	2024/09/24		105	%	80 - 120
			Dissolved Sodium (Na)	2024/09/24		102	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/24		92	%	80 - 120
			Dissolved Sulphur (S)	2024/09/24		102	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/24		107	%	80 - 120
			Dissolved Barium (Ba)	2024/09/24		93	%	80 - 120
			Dissolved Silicon (Si)	2024/09/24		111	%	80 - 120
			Dissolved Boron (B)	2024/09/24		84	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/24		105	%	80 - 120
B532394	VSC	LCS	Dissolved Iron (Fe)	2024/09/24		105	%	80 - 120
			Dissolved Lithium (Li)	2024/09/24		96	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/24		101	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/24		103	%	80 - 120
			Dissolved Potassium (K)	2024/09/24		98	%	80 - 120
			Dissolved Sodium (Na)	2024/09/24		96	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/24		94	%	80 - 120
			Dissolved Sulphur (S)	2024/09/24		97	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/24		102	%	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 Barium (Ba)	2024/09/24		95	%	80 - 120
			Dissolved Silicon (Si)	2024/09/24		104	%	80 - 120
			Dissolved Boron (B)	2024/09/24		89	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/24		98	%	80 - 120
B532601	SBN	LCS	Total Ammonia (N)	2024/09/23		108	%	80 - 120
B532623	SBN	LCS	Total Ammonia (N)	2024/09/23		106	%	80 - 120
B533058	MDO	LCS	Dissolved Organic Carbon (C)	2024/09/23		97	%	80 - 120
B535845	KH2	LCS	Total Aluminum (Al)	2024/09/25		107	%	80 - 120
			Total Chromium (Cr)	2024/09/25		107	%	80 - 120
			Total Cobalt (Co)	2024/09/25		108	%	80 - 120
			Total Copper (Cu)	2024/09/25		109	%	80 - 120
			Total Lead (Pb)	2024/09/25		107	%	80 - 120
			Total Antimony (Sb)	2024/09/25		107	%	80 - 120
			Total Molybdenum (Mo)	2024/09/25		108	%	80 - 120
			Total Nickel (Ni)	2024/09/25		107	%	80 - 120
			Total Selenium (Se)	2024/09/25		107	%	80 - 120
			Total Silver (Ag)	2024/09/25		106	%	80 - 120
			Total Arsenic (As)	2024/09/25		111	%	80 - 120
			Total Thallium (Tl)	2024/09/25		104	%	80 - 120
			Total Tin (Sn)	2024/09/25		105	%	80 - 120
			Total Titanium (Ti)	2024/09/25		108	%	80 - 120
			Total Uranium (U)	2024/09/25		109	%	80 - 120
			Total Vanadium (V)	2024/09/25		109	%	80 - 120
			Total Zinc (Zn)	2024/09/25		108	%	80 - 120
			Total Beryllium (Be)	2024/09/25		98	%	80 - 120
B535884	VSC	LCS	Total Iron (Fe)	2024/09/25		109	%	80 - 120
			Total Lithium (Li)	2024/09/25		93	%	80 - 120
			Total Magnesium (Mg)	2024/09/25		103	%	80 - 120
			Total Manganese (Mn)	2024/09/25		106	%	80 - 120
			Total Potassium (K)	2024/09/25		96	%	80 - 120
			Total Sodium (Na)	2024/09/25		93	%	80 - 120
			Total Strontium (Sr)	2024/09/25		95	%	80 - 120
			Total Sulphur (S)	2024/09/25		100	%	80 - 120
			Total Phosphorus (P)	2024/09/25		100	%	80 - 120
			Total Barium (Ba)	2024/09/25		95	%	80 - 120
			Total Silicon (Si)	2024/09/25		103	%	80 - 120
			Total Boron (B)	2024/09/25		94	%	80 - 120
			Total Calcium (Ca)	2024/09/25		95	%	80 - 120
B536335	JYU	LCS	Dissolved Organic Carbon (C)	2024/09/25		98	%	80 - 120
B536722	KH2	LCS	Total Aluminum (Al)	2024/09/25		106	%	80 - 120
			Total Chromium (Cr)	2024/09/25		104	%	80 - 120
			Total Cobalt (Co)	2024/09/25		105	%	80 - 120
			Total Copper (Cu)	2024/09/25		105	%	80 - 120
			Total Lead (Pb)	2024/09/25		106	%	80 - 120
			Total Antimony (Sb)	2024/09/25		104	%	80 - 120
			Total Molybdenum (Mo)	2024/09/25		106	%	80 - 120
			Total Nickel (Ni)	2024/09/25		105	%	80 - 120
			Total Selenium (Se)	2024/09/25		109	%	80 - 120
			Total Silver (Ag)	2024/09/25		104	%	80 - 120
			Total Arsenic (As)	2024/09/25		107	%	80 - 120
			Total Thallium (Tl)	2024/09/25		103	%	80 - 120
			Total Tin (Sn)	2024/09/25		105	%	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
			Total Titanium (Ti)	2024/09/25		105	%	80 - 120
			Total Uranium (U)	2024/09/25		107	%	80 - 120
			Total Vanadium (V)	2024/09/25		104	%	80 - 120
			Total Zinc (Zn)	2024/09/25		106	%	80 - 120
			Total Beryllium (Be)	2024/09/25		100	%	80 - 120
B536729	IK0	LCS	Total Iron (Fe)	2024/09/26		93	%	80 - 120
			Total Lithium (Li)	2024/09/26		87	%	80 - 120
			Total Magnesium (Mg)	2024/09/26		90	%	80 - 120
			Total Manganese (Mn)	2024/09/26		95	%	80 - 120
			Total Potassium (K)	2024/09/26		92	%	80 - 120
			Total Sodium (Na)	2024/09/26		88	%	80 - 120
			Total Strontium (Sr)	2024/09/26		93	%	80 - 120
			Total Sulphur (S)	2024/09/26		90	%	80 - 120
			Total Phosphorus (P)	2024/09/26		93	%	80 - 120
			Total Barium (Ba)	2024/09/26		96	%	80 - 120
			Total Silicon (Si)	2024/09/26		89	%	80 - 120
			Total Boron (B)	2024/09/26		98	%	80 - 120
			Total Calcium (Ca)	2024/09/26		91	%	80 - 120
B536890	JYU	LCS	Total Organic Carbon (C)	2024/09/25		86	%	80 - 120
B531283	YL7	SRM	Total Nitrogen (N)	2024/09/23		104	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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).

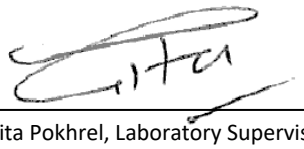
Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C474363
Report Date: 2024/09/26

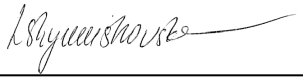
Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

VALIDATION SIGNATURE PAGE

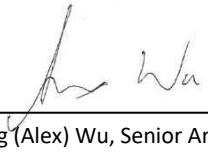
The analytical data and all QC contained in this report were reviewed and validated by:



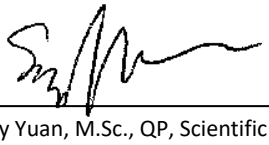
Gita Pokhrel, Laboratory Supervisor



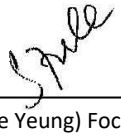
Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



Qiliang (Alex) Wu, Senior Analyst



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



Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

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

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VALIDATION SIGNATURE PAGE(CONT'D)

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

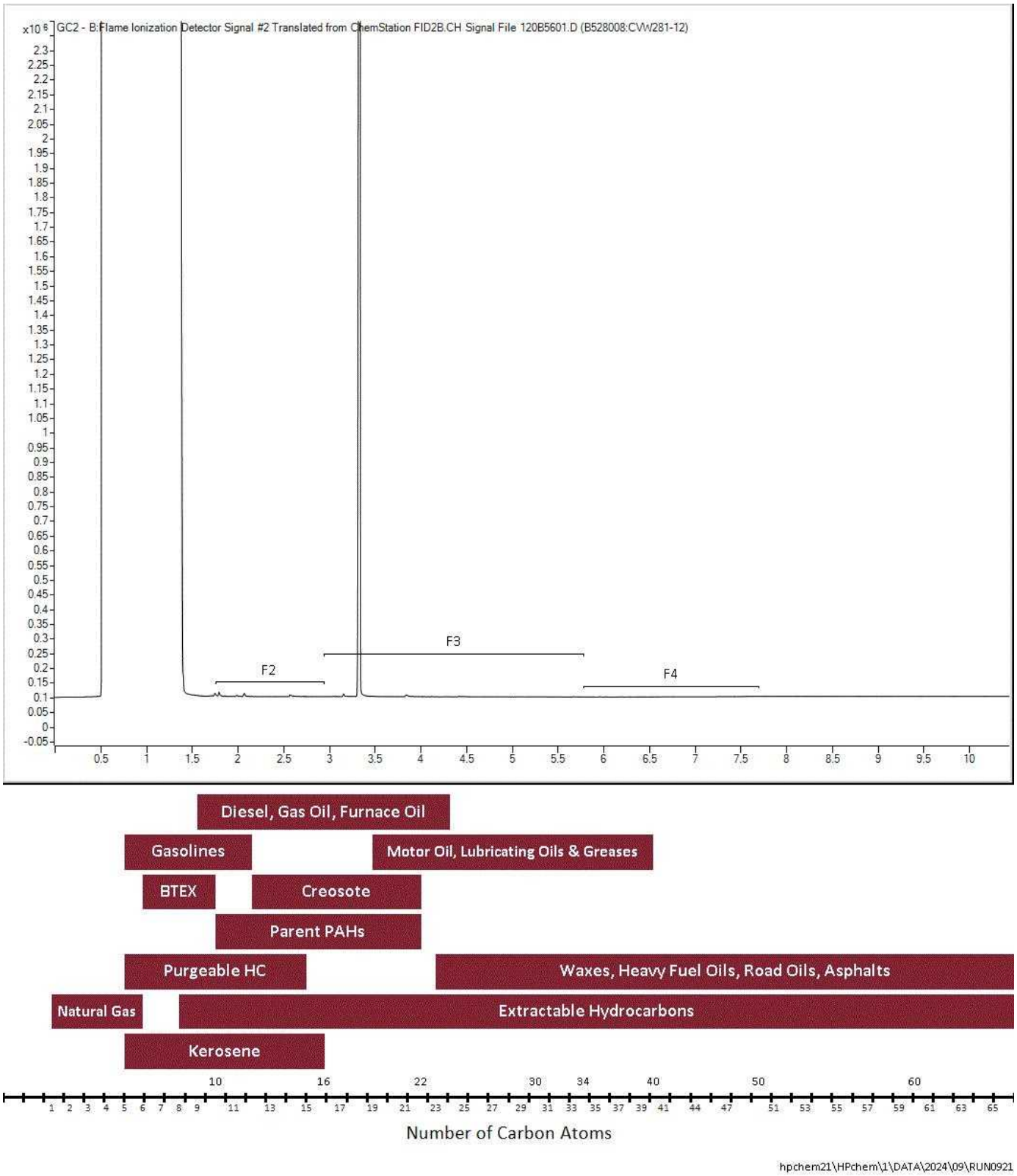
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request.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

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C474363
Report Date: 2024/09/26
Bureau Veritas Sample: CVW281

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-03

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



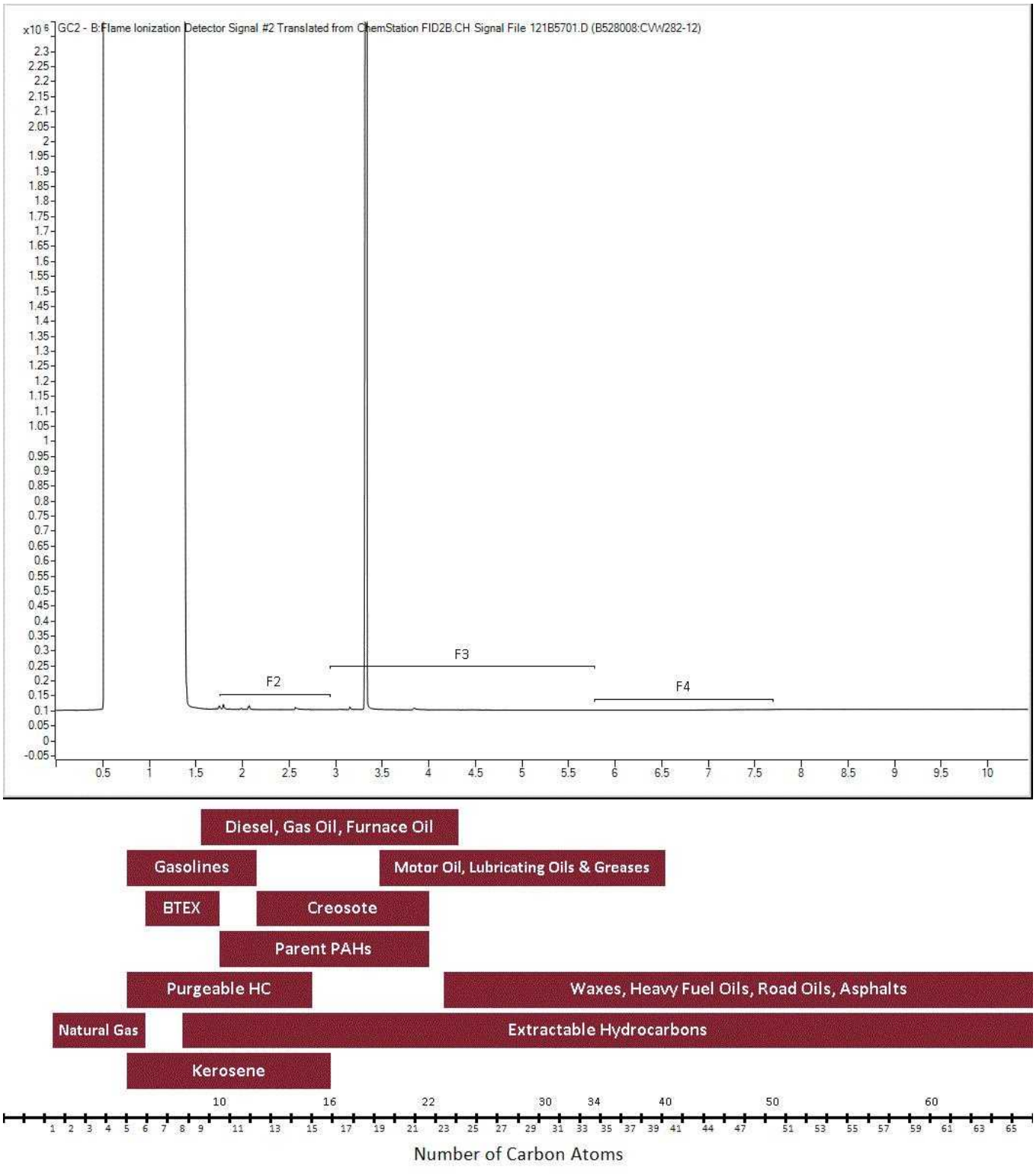
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C474363
Report Date: 2024/09/26
Bureau Veritas Sample: CVW282

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-08

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



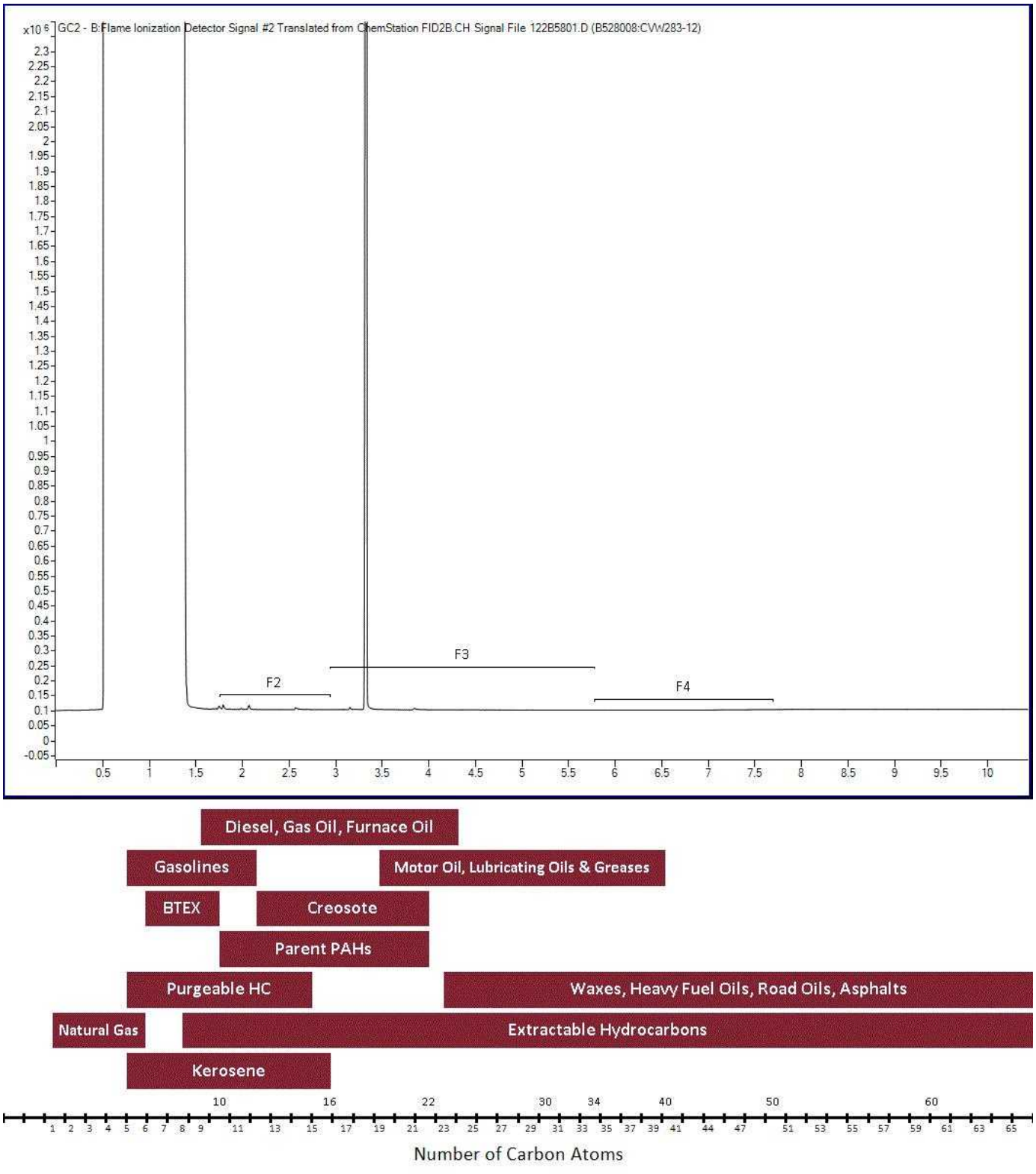
hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Bureau Veritas Job #: C474363
Report Date: 2024/09/26
Bureau Veritas Sample: CVW283

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-09

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem21\HPchem\1\DATA\2024\09\RUN0921

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

Maxxam
A Bureau Veritas Group Company

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☒ Edmonton
9331 - 48 Street, T6B 2R4
Phone: (780) 577-7100
Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 298626

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: Worley
Contact Name: Stacy Gibb	Contact Name: Alex Haigh
Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7	Address: 49 Quarry Park Blvd SE Calgary, AB T2C 3E7
Email: Stacy.Gibb@worley.com	Email: alex.haigh@worley.com
Ph: 587 8434 5393	Ph: 587 847 6246
Sampler Name (Print): Stacy Gibb, Brendan Chapman	Consultant Project #: 417085-54419

ANALYSIS REQUESTED

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS: TOT ☒ DIS ☒	MERCURY: TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	True Colour, TSS, TDS, Turbidity	Oil + Grease	Fe TOC, DOC, Sulphide	Nitrate, Nitrite, Ammonia (total)	TKN, orthophosphate	Sulphur - total + dissolved	COD	Alkylated PAH, TPH
1	AEMP-DS-03		X			18	2024/09/17	12:08	X			X	X							X	X					X			X	X	X	X	X	X	X	X
2	AEMP-DS-08		X			18	↓	10:13	X			X	X							X	X					X			X	X	X	X	X	X	X	X
3	AEMP-DS-09		X			18	↓	11:37	X			X	X							X	X					X			X	X	X	X	X	X	X	X
4	Limited Sample (½ PAH Bottle)																																			
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				

MCAL-2024-09-1696

IOL SITE LOCATION: Norman Wells, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419 . 24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS also email: canada.chemistry@worley.com cacal_IOR.data.trade@... IESA 2601436

JARS USED & NOT SUBMITTED Enter N/A for Water: N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐ (2 days) ☐ (1 day) ☐ (same day) ☐
Date Required

	YES	NO	COOLER ID # MCAL			
SEAL PRESENT	✓		TEMP °C	0.9 (1)	1.2 (2)	1.1 (3)
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID # MCAL			
SEAL PRESENT	✓		TEMP °C	2.2 (1)	2.1 (2)	1.3 (3)
SEAL INTACT	✓					
COOLING MEDIA PRESENT	✓					

	YES	NO	COOLER ID #			
SEAL PRESENT			TEMP °C	(1)	(2)	(3)
SEAL INTACT						
COOLING MEDIA PRESENT						

RELINQUISHED BY:	DATE:	TIME (24 HR)	RECEIVED BY:	DATE:	TIME (24 HR)
1.	Alex Haigh 2024/09/18	10:00	1. SIDJAN SABO	2024/09/19	15:10
2.			2.		
3.			3.		

LAB USE ONLY
MAXXAM JOB # C474363
SAMPLES
LABELED BY: NAS
VERIFIED BY: KLN

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292227

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/10/04
Report #: R3566943
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474983
Received: 2024/09/20, 17:08

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH (1)	2	AB SOP-00005	SM 24 2320 B m
BTEX/F1 in Water by HS GC/MS/FID (1)	2	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX (1)	2		Auto Calc
Cadmium - low level CCME - Dissolved (1)	2		Auto Calc
Cadmium - low level CCME (Total) (1)	2		Auto Calc
Chloride/Sulphate by Auto Colourimetry (1)	2	AB SOP-00020	SM24-4500-Cl/SO4-E m
COD by Colorimeter (1)	2	AB SOP-00016	SM 24 5220D m
True Colour (1)	2	CAL SOP-00049	SM 24 2120 C m
Carbon (DOC) (1, 2)	2	AB SOP-00087	MMCW 119 1996 m
Conductivity @25C (1)	2	AB SOP-00005	SM 24 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (1, 3)	2	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Sulphide (as H2S) (1)	2		Auto Calc
Hardness (1)	2		Auto Calc
Mercury (Dissolved) by CV (1, 4)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Mercury (Total) by CV (1)	2	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (1, 4)	2	AB SOP-00042	EPA 6010d R5 m
Elements by ICP - Total (1)	2	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (1, 4)	2	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Total (1)	2	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (1)	2		Auto Calc
Ammonia-N (Total) (1)	2	AB SOP-00007	SM 24 4500 NH3 A G m
Nitrate and Nitrite (1)	2		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water (1)	2	AB SOP-00091	SM 24 4500 NO3m
Nitrate (as N) (1)	2		Auto Calc
Oil and Grease by IR (1)	2	CAL SOP-00096	SM 23 5520C m
Target & Alkylated PAH in Water by GC/MS (1, 5)	2	AB SOP-00037 CAL SOP-00250	EPA 8270e m
Benzo[a]pyrene Equivalency (1, 6)	2		Auto Calc
pH @25°C (1, 7)	2	AB SOP-00005	SM 24 4500-H+B m
Orthophosphate by Automated Analyzer (1, 8)	2	AB SOP-00025	SM 24 4500-P A,F m
Total Sulphide (1)	2	AB SOP-00080	SM 24 4500 S2-A D Fm

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292227

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/10/04
Report #: R3566943
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474983
Received: 2024/09/20, 17:08

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue) (1)	2	AB SOP-00065	SM 24 2540 C m
Total Kjeldahl Nitrogen (Total) (1)	2	BBY WI-00033	Auto Calc
Nitrogen (Total) (1)	2	AB SOP-00093	SM 24 4500-N C m
Carbon (Total Organic) (1, 9)	2	AB SOP-00087	MMCW 119 1996 m
Hydrocarbon by IR (Mineral oil & grease) (1)	2	CAL SOP-00096	SM 23 5520C,F m
Total Suspended Solids (NFR) (1)	2	AB SOP-00061	SM 24 2540 D m
Turbidity (1)	2	CAL SOP-00081	SM 24 2130 B m

Remarks:

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

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. All samples were analyzed within hold time unless otherwise flagged.

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) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(3) Silica gel clean up employed.
(4) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419
Your C.O.C. #: 292227

Attention: Alex Haigh

Advisian
Suite 500, 151 Canada Olympic
Calgary, AB
Canada T3B 6B7

Report Date: 2024/10/04
Report #: R3566943
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C474983

Received: 2024/09/20, 17:08

(5) Alkylated PAH results are semiquantitative
(6) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(7) 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.
(8) Orthophosphate > Total Phosphorus Imbalance: When applicable, Orthophosphate, Total Phosphorus and dissolved Phosphorus results were reviewed and data quality meets acceptable levels unless otherwise noted.
(9) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Namita Sahni
Customer Solutions Representative
04 Oct 2024 15:34:41

Please direct all questions regarding this Certificate of Analysis to:
Namita Sahni, Customer Solutions Representative
Email: Namita.Sahni@bureauveritas.com
Phone# (604)639-2614

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

Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

AT1 BTEX AND F1-F2 IN WATER (WATER)

Bureau Veritas ID		CWA324	CWA325			CWA325		
Sampling Date		2024/09/18 12:56	2024/09/18 13:21			2024/09/18 13:21		
COC Number		292227	292227			292227		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	B532266	<0.10	0.10	B532266
Volatiles								
Benzene	mg/L	<0.00040	<0.00040	0.00040	B532062			
Toluene	mg/L	<0.00040	<0.00040	0.00040	B532062			
Ethylbenzene	mg/L	<0.00040	<0.00040	0.00040	B532062			
m & p-Xylene	mg/L	<0.00080	<0.00080	0.00080	B532062			
o-Xylene	mg/L	<0.00040	<0.00040	0.00040	B532062			
Xylenes (Total)	mg/L	<0.00089	<0.00089	0.00089	B531503			
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	0.10	B531503			
F1 (C6-C10)	mg/L	<0.10	<0.10	0.10	B532062			
Extraction Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	103	94		B532266	93		B532266
Instrument Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	97	94		B532062			
4-Bromofluorobenzene (sur.)	%	100	100		B532062			
D4-1,2-Dichloroethane (sur.)	%	97	104		B532062			

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TOTAL KJELDAHL NITROGEN (TOTAL)

Bureau Veritas ID		CWA324		CWA325		
Sampling Date		2024/09/18 12:56		2024/09/18 13:21		
COC Number		292227		292227		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Calculated Parameters						
Total Total Kjeldahl Nitrogen (Calc)	mg/L	0.26	B531227	0.13	0.020	B531227
Nutrients						
Total Nitrogen (N)	mg/L	0.32	B534847	0.18	0.020	B536479
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C474983
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Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CWA324		CWA325		
Sampling Date		2024/09/18 12:56		2024/09/18 13:21		
COC Number		292227		292227		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements						
Total Cadmium (Cd)	mg/L	0.000093	B531295	0.000043	0.000020	B531295
Total Aluminum (Al)	mg/L	1.1	B540075	0.36	0.0030	B539832
Total Antimony (Sb)	mg/L	<0.00060	B540075	<0.00060	0.00060	B539832
Total Arsenic (As)	mg/L	0.00071	B540075	0.00054	0.00020	B539832
Total Barium (Ba)	mg/L	0.072	B540078	0.068	0.010	B539849
Total Beryllium (Be)	mg/L	<0.0010	B540075	<0.0010	0.0010	B539832
Total Boron (B)	mg/L	<0.020	B540078	0.020	0.020	B539849
Total Calcium (Ca)	mg/L	53	B540078	41	0.30	B539849
Total Chromium (Cr)	mg/L	<0.0010	B540075	<0.0010	0.0010	B539832
Total Cobalt (Co)	mg/L	0.0019	B540075	0.00035	0.00030	B539832
Total Copper (Cu)	mg/L	0.0027	B540075	0.0016	0.0010	B539832
Total Iron (Fe)	mg/L	1.9	B540078	0.60	0.060	B539849
Total Lead (Pb)	mg/L	0.00037	B540075	0.00024	0.00020	B539832
Total Lithium (Li)	mg/L	<0.020	B540078	<0.020	0.020	B539849
Total Magnesium (Mg)	mg/L	24	B540078	12	0.20	B539849
Total Manganese (Mn)	mg/L	0.038	B540078	0.015	0.0040	B539849
Total Molybdenum (Mo)	mg/L	0.00089	B540075	0.0010	0.00020	B539832
Total Nickel (Ni)	mg/L	0.0056	B540075	0.0022	0.00050	B539832
Total Phosphorus (P)	mg/L	<0.10	B540078	<0.10	0.10	B539849
Total Potassium (K)	mg/L	1.1	B540078	1.2	0.30	B539849
Total Selenium (Se)	mg/L	0.00056	B540075	0.00044	0.00020	B539832
Total Silicon (Si)	mg/L	2.3	B540078	2.0	0.50	B539849
Total Silver (Ag)	mg/L	<0.00010	B540075	<0.00010	0.00010	B539832
Total Sodium (Na)	mg/L	11	B540078	8.7	0.50	B539849
Total Strontium (Sr)	mg/L	0.26	B540078	0.30	0.020	B539849
Total Sulphur (S)	mg/L	45	B540078	18	0.20	B539849
Total Thallium (Tl)	mg/L	<0.00020	B540075	<0.00020	0.00020	B539832
Total Tin (Sn)	mg/L	<0.0010	B540075	<0.0010	0.0010	B539832
Total Titanium (Ti)	mg/L	0.026	B540075	0.0063	0.0010	B539832
Total Uranium (U)	mg/L	0.00089	B540075	0.00086	0.00010	B539832
Total Vanadium (V)	mg/L	0.0025	B540075	0.0013	0.0010	B539832
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID		CWA324		CWA325		
Sampling Date		2024/09/18 12:56		2024/09/18 13:21		
COC Number		292227		292227		
	UNITS	**AEMP-DS-06**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	0.016	B540075	0.0040	0.0030	B539832
RDL = Reportable Detection Limit						

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Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CWA324			CWA324			CWA325		
Sampling Date		2024/09/18 12:56			2024/09/18 12:56			2024/09/18 13:21		
COC Number		292227			292227			292227		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Calculated Parameters										
Hardness (CaCO3)	mg/L	200	0.50	B531492				140	0.50	B531492
Ion Balance (% Difference)	%	4.6	N/A	B531494				5.2	N/A	B531494
Nitrate (N)	mg/L	0.061	0.010	B531482				0.045	0.010	B531482
Nitrate (NO3)	mg/L	0.27	0.044	B531478				0.20	0.044	B531478
Nitrite (NO2)	mg/L	<0.033	0.033	B531478				<0.033	0.033	B531478
Sulphide (as H2S)	mg/L	0.0051	0.0020	B531210				0.0041	0.0020	B531210
Demand Parameters										
Chemical Oxygen Demand	mg/L	14	10	B533964				<10 (1)	10	B533964
Elements										
Dissolved Cadmium (Cd)	mg/L	0.000030	0.000020	B531496				<0.000020	0.000020	B531496
Misc. Inorganics										
Conductivity	uS/cm	470	2.0	B532103				330	2.0	B532103
Dissolved Organic Carbon (C)	mg/L	4.3	0.50	B539718				3.0	0.50	B539718
pH	pH	7.98	N/A	B532102				8.02	N/A	B532102
Total Organic Carbon (C)	mg/L	4.6	0.50	B538594	3.6	0.50	B538594	2.1	0.50	B538594
Total Dissolved Solids	mg/L	290	10	B533769	300	10	B533769	200	10	B533769
Total Suspended Solids	mg/L	15	0.96	B533776				22	1.0	B533776
Anions										
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	B532100				<1.0	1.0	B532100
Alkalinity (Total as CaCO3)	mg/L	96	1.0	B532100				98	1.0	B532100
Bicarbonate (HCO3)	mg/L	120	1.0	B532100				120	1.0	B532100
Carbonate (CO3)	mg/L	<1.0	1.0	B532100				<1.0	1.0	B532100
Hydroxide (OH)	mg/L	<1.0	1.0	B532100				<1.0	1.0	B532100
Total Sulphide	mg/L	0.0048 (2)	0.0018	B534429				0.0038	0.0018	B534429
Chloride (Cl)	mg/L	7.1	1.0	B531943				9.1	1.0	B531943
Sulphate (SO4)	mg/L	140	5.0	B531943				62	1.0	B531943

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) COD < TOC: Both values fall within the method uncertainty for duplicates and are likely equivalent.
(2) Matrix spike exceeds acceptance limits due to matrix interference.

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		CWA324			CWA324			CWA325		
Sampling Date		2024/09/18 12:56			2024/09/18 12:56			2024/09/18 13:21		
COC Number		292227			292227			292227		
	UNITS	**AEMP-DS-06**	**RDL**	**QC Batch**	**AEMP-DS-06 Lab-Dup**	**RDL**	**QC Batch**	**AEMP-DS-07**	**RDL**	**QC Batch**
Nutrients										
Total Ammonia (N)	mg/L	<0.015	0.015	B536625				<0.015	0.015	B536625
Orthophosphate (P)	mg/L	<0.0030	0.0030	B531764				<0.0030	0.0030	B531764
Nitrite (N)	mg/L	<0.010	0.010	B531592				<0.010	0.010	B531592
Nitrate plus Nitrite (N)	mg/L	0.061	0.010	B531592				0.045	0.010	B531592
Misc. Organics										
Oil and grease	mg/L	<2.0	2.0	B526827				<2.0	2.0	B526827
Total Petroleum Hydrocarbon	mg/L	<2.0	2.0	B528926				<2.0	2.0	B528926
Physical Properties										
True Colour	PtCo units	17	2.0	B531702				4.7	2.0	B531702
Physical Properties										
Turbidity	NTU	32	0.10	B531561	32	0.10	B531561	10	0.10	B531561

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas ID		CWA325		
Sampling Date		2024/09/18 13:21		
COC Number		292227		
	UNITS	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
Physical Properties				
True Colour	PtCo units	4.0	2.0	B531702

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

Bureau Veritas Edmonton: 4326 76 Avenue NW T6B 2H8 Telephone (780)577-7100 Fax (780)450-4187

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CWA324	CWA325			CWA325		
Sampling Date		2024/09/18 12:56	2024/09/18 13:21			2024/09/18 13:21		
COC Number		292227	292227			292227		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	0.000010	B531352			
Acenaphthene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
Acenaphthylene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
Acridine	ug/L	<0.040	<0.040	0.040	B532263	<0.040	0.040	B532263
Anthracene	ug/L	<0.010	<0.010	0.010	B532263	<0.010	0.010	B532263
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	B532263	<0.0075	0.0075	B532263
Benzo(e)pyrene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
Chrysene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	B532263	<0.0075	0.0075	B532263
Fluoranthene	ug/L	<0.010	<0.010	0.010	B532263	<0.010	0.010	B532263
Fluorene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
Indeno(1,2,3-cd)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
Naphthalene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
Phenanthrene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
Perylene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
Pyrene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
Quinoline	ug/L	<0.20	<0.20	0.20	B532263	<0.20	0.20	B532263
Retene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
C1-Naphthalene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
C3-Naphthalene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
C4-Naphthalene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
C2-Naphthalene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
Biphenyl	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CWA324	CWA325			CWA325		
Sampling Date		2024/09/18 12:56	2024/09/18 13:21			2024/09/18 13:21		
COC Number		292227	292227			292227		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
C1-biphenyl	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C2-biphenyl	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C1-fluorene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
C2-fluorene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
C3-fluorene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
Dibenzothiophene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C1-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C2-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C3-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C4-dibenzothiophene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C1 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
C2 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
C3 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
C4 phenanthrene/anthracene	ug/L	<0.050	<0.050	0.050	B532263	<0.050	0.050	B532263
C1 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C2 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C3 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C4 fluoranthene/pyrene	ug/L	<0.020	<0.020	0.020	B532263	<0.020	0.020	B532263
C1 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
C2 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
C3 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
C4 benzo(a)anthracene/chrysene	ug/L	<0.0085	<0.0085	0.0085	B532263	<0.0085	0.0085	B532263
C1benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B532263	<0.0075	0.0075	B532263
C2benzobjkfluoranthene/benzoapyrene	ug/L	<0.0075	<0.0075	0.0075	B532263	<0.0075	0.0075	B532263
C1-Acenaphthene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
1-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	B532263	<0.10	0.10	B532263
Extraction Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	119	118		B532263	117		B532263
D8-ACENAPHTHYLENE (sur.)	%	96	98		B532263	99		B532263
D8-NAPHTHALENE (sur.)	%	81	82		B532263	86		B532263

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		CWA324	CWA325			CWA325		
Sampling Date		2024/09/18 12:56	2024/09/18 13:21			2024/09/18 13:21		
COC Number		292227	292227			292227		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**	**AEMP-DS-07 Lab-Dup**	**RDL**	**QC Batch**
TERPHENYL-D14 (sur.)	%	124	124		B532263	120		B532263

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID		CWA324	CWA325		
Sampling Date		2024/09/18 12:56	2024/09/18 13:21		
COC Number		292227	292227		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B535245
Total Mercury (Hg)	ug/L	<0.0019	<0.0019	0.0019	B535366
RDL = Reportable Detection Limit					

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ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		CWA324	CWA325		
Sampling Date		2024/09/18 12:56	2024/09/18 13:21		
COC Number		292227	292227		
	UNITS	**AEMP-DS-06**	**AEMP-DS-07**	**RDL**	**QC Batch**
Elements					
Dissolved Aluminum (Al)	mg/L	0.094	0.050	0.0030	B531750
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	0.00060	B531750
Dissolved Arsenic (As)	mg/L	0.00026	0.00032	0.00020	B531750
Dissolved Barium (Ba)	mg/L	0.052	0.046	0.010	B532444
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	0.0010	B531750
Dissolved Boron (B)	mg/L	<0.020	<0.020	0.020	B532444
Dissolved Calcium (Ca)	mg/L	48	38	0.30	B532444
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	0.0010	B531750
Dissolved Cobalt (Co)	mg/L	<0.00030	<0.00030	0.00030	B531750
Dissolved Copper (Cu)	mg/L	0.0023	<0.0010	0.0010	B531750
Dissolved Iron (Fe)	mg/L	0.062	<0.060	0.060	B532444
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	0.00020	B531750
Dissolved Lithium (Li)	mg/L	<0.020	<0.020	0.020	B532444
Dissolved Magnesium (Mg)	mg/L	21	11	0.20	B532444
Dissolved Manganese (Mn)	mg/L	0.0058	<0.0040	0.0040	B532444
Dissolved Molybdenum (Mo)	mg/L	0.00079	0.0010	0.00020	B531750
Dissolved Nickel (Ni)	mg/L	0.0027	0.0016	0.00050	B531750
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	B532444
Dissolved Potassium (K)	mg/L	0.95	1.0	0.30	B532444
Dissolved Selenium (Se)	mg/L	0.00056	0.00039	0.00020	B531750
Dissolved Silicon (Si)	mg/L	1.3	1.3	0.50	B532444
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	0.00010	B531750
Dissolved Sodium (Na)	mg/L	11	8.6	0.50	B532444
Dissolved Strontium (Sr)	mg/L	0.22	0.24	0.020	B532444
Dissolved Sulphur (S)	mg/L	41	17	0.20	B532444
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	0.00020	B531750
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	0.0010	B531750
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	0.0010	B531750
Dissolved Uranium (U)	mg/L	0.00076	0.00086	0.00010	B531750
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	0.0010	B531750
Dissolved Zinc (Zn)	mg/L	0.0058	<0.0030	0.0030	B531750
RDL = Reportable Detection Limit					

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Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CWA324
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/09/18
Relinquished: 2024/09/19
Received: 2024/09/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B532100	N/A	2024/09/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B532062	N/A	2024/09/23	Wonjeong Park
F1-BTEX	CALC/MS	B531503	N/A	2024/09/24	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B531496	N/A	2024/09/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B531295	N/A	2024/09/29	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B531943	N/A	2024/09/22	Adam Fishleigh
COD by Colorimeter	M/PROB	B533964	N/A	2024/09/24	Amy Phan
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B539718	N/A	2024/09/27	Jill Yuen
Conductivity @25C	COND	B532103	N/A	2024/09/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B532266	2024/09/24	2024/09/25	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B531210	N/A	2024/09/24	Automated Statchk
Hardness	CALC	B531492	N/A	2024/09/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B535245	2024/09/24	2024/09/26	Meet Patel
Mercury (Total) by CV	CV	B535366	2024/09/24	2024/09/26	Meet Patel
Elements by ICP - Dissolved	ICPA	B532444	N/A	2024/09/25	Sarah Dolan
Elements by ICP - Total	ICPA	B540078	2024/09/27	2024/09/28	Sarah Dolan
Elements by ICPMS - Dissolved	ICPM	B531750	N/A	2024/09/22	Jason Bao
Elements by ICPMS - Total	ICPM	B540075	2024/09/27	2024/09/27	Kevin Huang
Ion Balance	CALC	B531494	N/A	2024/09/26	Automated Statchk
Ammonia-N (Total)	KONE	B536625	N/A	2024/09/26	Adam Fishleigh
Nitrate and Nitrite	CALC	B531478	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B531592	N/A	2024/09/21	Isabelle White
Nitrate (as N)	CALC	B531482	2024/09/23	2024/09/23	Automated Statchk
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B532263	2024/09/24	2024/09/28	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B531352	N/A	2024/10/04	Automated Statchk
pH @25°C	AT/ALK	B532102	N/A	2024/09/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B531764	N/A	2024/09/21	Isabelle White
Total Sulphide	SPEC	B534429	N/A	2024/09/24	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B533769	2024/09/24	2024/09/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B531227	N/A	2024/09/25	Automated Statchk
Nitrogen (Total)	AC/COL	B534847	2024/09/24	2024/09/25	Yan Lin
Carbon (Total Organic)	TECH	B538594	N/A	2024/09/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B533776	2024/09/24	2024/09/25	Haydee Estilong
Turbidity	TURB	B531561	N/A	2024/09/21	Thi Boi Tran Nguyen

Bureau Veritas ID: CWA324 Dup
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/09/18
Relinquished: 2024/09/19
Received: 2024/09/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Dissolved Solids (Filt. Residue)	BAL	B533769	2024/09/24	2024/09/25	Daryl Viktoria Noval

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Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CWA324 Dup
Sample ID: AEMP-DS-06
Matrix: Water

Collected: 2024/09/18
Relinquished: 2024/09/19
Received: 2024/09/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbon (Total Organic)	TECH	B538594	N/A	2024/09/26	Jill Yuen
Turbidity	TURB	B531561	N/A	2024/09/21	Thi Boi Tran Nguyen

Bureau Veritas ID: CWA325
Sample ID: AEMP-DS-07
Matrix: Water

Collected: 2024/09/18
Relinquished: 2024/09/19
Received: 2024/09/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity @25C (pp, total), CO3,HCO3,OH	AT/ALK	B532100	N/A	2024/09/23	Ayesha Ayesha
BTEX/F1 in Water by HS GC/MS/FID	HSGC/MS	B532062	N/A	2024/09/23	Wonjeong Park
F1-BTEX	CALC/MS	B531503	N/A	2024/09/24	Automated Statchk
Cadmium - low level CCME - Dissolved	CALC/MS	B531496	N/A	2024/09/23	Automated Statchk
Cadmium - low level CCME (Total)	CALC/MS	B531295	N/A	2024/09/29	Automated Statchk
Chloride/Sulphate by Auto Colourimetry	KONE	B531943	N/A	2024/09/22	Adam Fishleigh
COD by Colorimeter	M/PROB	B533964	N/A	2024/09/24	Amy Phan
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
Carbon (DOC)	TECH	B539718	N/A	2024/09/27	Jill Yuen
Conductivity @25C	COND	B532103	N/A	2024/09/23	Ayesha Ayesha
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B532266	2024/09/24	2024/09/24	Skye (Chuhan) Huang
Sulphide (as H2S)	CALC	B531210	N/A	2024/09/24	Automated Statchk
Hardness	CALC	B531492	N/A	2024/09/26	Automated Statchk
Mercury (Dissolved) by CV	CV	B535245	2024/09/24	2024/09/26	Meet Patel
Mercury (Total) by CV	CV	B535366	2024/09/24	2024/09/26	Meet Patel
Elements by ICP - Dissolved	ICPA	B532444	N/A	2024/09/25	Sarah Dolan
Elements by ICP - Total	ICPA	B539849	2024/09/27	2024/09/27	Sarah Dolan
Elements by ICPMS - Dissolved	ICPM	B531750	N/A	2024/09/22	Jason Bao
Elements by ICPMS - Total	ICPM	B539832	2024/09/27	2024/09/27	Kevin Huang
Ion Balance	CALC	B531494	N/A	2024/09/26	Automated Statchk
Ammonia-N (Total)	KONE	B536625	N/A	2024/09/26	Adam Fishleigh
Nitrate and Nitrite	CALC	B531478	N/A	2024/09/23	Automated Statchk
NO2 (N); NO2 (N) + NO3 (N) in Water	AC/COL	B531592	N/A	2024/09/21	Isabelle White
Nitrate (as N)	CALC	B531482	2024/09/23	2024/09/23	Automated Statchk
Oil and Grease by IR	IR	B526827	2024/09/22	2024/09/23	Ramandeep Ramandeep
Target & Alkylated PAH in Water by GC/MS	GC/MS	B532263	2024/09/24	2024/09/27	Don Maxwell
Benzo[a]pyrene Equivalency	GC/MSD	B531352	N/A	2024/10/03	Automated Statchk
pH @25°C	AT/ALK	B532102	N/A	2024/09/23	Ayesha Ayesha
Orthophosphate by Automated Analyzer	KONE	B531764	N/A	2024/09/21	Isabelle White
Total Sulphide	SPEC	B534429	N/A	2024/09/24	Ly Vu
Total Dissolved Solids (Filt. Residue)	BAL	B533769	2024/09/24	2024/09/25	Daryl Viktoria Noval
Total Kjeldahl Nitrogen (Total)	CALC	B531227	N/A	2024/09/26	Automated Statchk
Nitrogen (Total)	AC/COL	B536479	2024/09/25	2024/09/25	Yan Lin
Carbon (Total Organic)	TECH	B538594	N/A	2024/09/26	Jill Yuen
Hydrocarbon by IR (Mineral oil & grease)	IR	B528926	2024/09/22	2024/09/24	Ramandeep Ramandeep
Total Suspended Solids (NFR)	BAL	B533776	2024/09/24	2024/09/25	Haydee Estilong

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Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

TEST SUMMARY

Bureau Veritas ID: CWA325
Sample ID: AEMP-DS-07
Matrix: Water

Collected: 2024/09/18
Relinquished: 2024/09/19
Received: 2024/09/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Turbidity	TURB	B531561	N/A	2024/09/21	Thi Boi Tran Nguyen

Bureau Veritas ID: CWA325 Dup
Sample ID: AEMP-DS-07
Matrix: Water

Collected: 2024/09/18
Relinquished: 2024/09/19
Received: 2024/09/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
True Colour	SPEC/COL	B531702	N/A	2024/09/21	Monakint Patel
CCME Hydrocarbons in Water (F2; C10-C16)	GC/FID	B532266	2024/09/24	2024/09/25	Skye (Chuhan) Huang
Target & Alkylated PAH in Water by GC/MS	GC/MS	B532263	2024/09/24	2024/09/27	Don Maxwell

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GENERAL COMMENTS

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

Package 1	4.7°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B526827	RRA	Method Blank	Oil and grease	2024/09/23	<2.0		mg/L	
B528926	RRA	Method Blank	Total Petroleum Hydrocarbon	2024/09/24	<2.0		mg/L	
B531561	TNY	Method Blank	Turbidity	2024/09/21	<0.10		NTU	
B531592	ISW	Method Blank	Nitrite (N)	2024/09/21	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2024/09/21	<0.010		mg/L	
B531702	MOP	Method Blank	True Colour	2024/09/21	<2.0		PtCo units	
B531750	JAB	Method Blank	Dissolved Aluminum (Al)	2024/09/22	<0.0030		mg/L	
			Dissolved Chromium (Cr)	2024/09/22	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2024/09/22	<0.00030		mg/L	
			Dissolved Copper (Cu)	2024/09/22	<0.0010		mg/L	
			Dissolved Lead (Pb)	2024/09/22	<0.00020		mg/L	
			Dissolved Antimony (Sb)	2024/09/22	<0.00060		mg/L	
			Dissolved Molybdenum (Mo)	2024/09/22	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2024/09/22	<0.00050		mg/L	
			Dissolved Selenium (Se)	2024/09/22	<0.00020		mg/L	
			Dissolved Silver (Ag)	2024/09/22	<0.00010		mg/L	
			Dissolved Arsenic (As)	2024/09/22	<0.00020		mg/L	
			Dissolved Thallium (Tl)	2024/09/22	<0.00020		mg/L	
			Dissolved Tin (Sn)	2024/09/22	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2024/09/22	<0.0010		mg/L	
			Dissolved Uranium (U)	2024/09/22	<0.00010		mg/L	
			Dissolved Vanadium (V)	2024/09/22	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2024/09/22	<0.0030		mg/L	
			Dissolved Beryllium (Be)	2024/09/22	<0.0010		mg/L	
B531764	ISW	Method Blank	Orthophosphate (P)	2024/09/21	<0.0030		mg/L	
B531943	AFI	Method Blank	Chloride (Cl)	2024/09/22	<1.0		mg/L	
			Sulphate (SO4)	2024/09/22	<1.0		mg/L	
B532062	WPK	Method Blank	1,4-Difluorobenzene (sur.)	2024/09/23		92	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/23		114	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/23		97	%	50 - 140
			Benzene	2024/09/23	<0.00040		mg/L	
			Toluene	2024/09/23	<0.00040		mg/L	
			Ethylbenzene	2024/09/23	<0.00040		mg/L	
			m & p-Xylene	2024/09/23	<0.00080		mg/L	
			o-Xylene	2024/09/23	<0.00040		mg/L	
			F1 (C6-C10)	2024/09/23	<0.10		mg/L	
B532100	AYE	Method Blank	Alkalinity (Total as CaCO3)	2024/09/23	0.789+4, RDL=1.0		mg/L	
			Alkalinity (PP as CaCO3)	2024/09/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2024/09/23	<1.0		mg/L	
			Carbonate (CO3)	2024/09/23	<1.0		mg/L	
			Hydroxide (OH)	2024/09/23	<1.0		mg/L	
B532103	AYE	Method Blank	Conductivity	2024/09/23	<2.0		uS/cm	
B532263	DM	Method Blank	D10-ANTHRACENE (sur.)	2024/09/27		114	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/27		121	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/27		90	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/27		67	%	50 - 130
			Acenaphthene	2024/09/27	<0.10		ug/L	
			Acenaphthylene	2024/09/27	<0.10		ug/L	
			Acridine	2024/09/27	<0.040		ug/L	
			Anthracene	2024/09/27	<0.010		ug/L	
			Benzo(a)anthracene	2024/09/27	<0.0085		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(b&j)fluoranthene	2024/09/27	<0.0085		ug/L	
			Benzo(k)fluoranthene	2024/09/27	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2024/09/27	<0.0085		ug/L	
			Benzo(c)phenanthrene	2024/09/27	<0.050		ug/L	
			Benzo(a)pyrene	2024/09/27	<0.0075		ug/L	
			Benzo(e)pyrene	2024/09/27	<0.050		ug/L	
			Chrysene	2024/09/27	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2024/09/27	<0.0075		ug/L	
			Fluoranthene	2024/09/27	<0.010		ug/L	
			Fluorene	2024/09/27	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2024/09/27	<0.0085		ug/L	
			Indeno(1,2,3-cd)fluoranthene	2024/09/27	<0.0085		ug/L	
			2-Methylnaphthalene	2024/09/27	<0.10		ug/L	
			Naphthalene	2024/09/27	<0.10		ug/L	
			Phenanthrene	2024/09/27	<0.050		ug/L	
			Perylene	2024/09/27	<0.050		ug/L	
			Pyrene	2024/09/27	<0.020		ug/L	
			Quinoline	2024/09/27	<0.20		ug/L	
			Retene	2024/09/27	<0.050		ug/L	
			C1-Naphthalene	2024/09/27	<0.10		ug/L	
			C3-Naphthalene	2024/09/27	<0.10		ug/L	
			C4-Naphthalene	2024/09/27	<0.10		ug/L	
			C2-Naphthalene	2024/09/27	<0.10		ug/L	
			Biphenyl	2024/09/27	<0.020		ug/L	
			C1-biphenyl	2024/09/27	<0.020		ug/L	
			C2-biphenyl	2024/09/27	<0.020		ug/L	
			C1-fluorene	2024/09/27	<0.050		ug/L	
			C2-fluorene	2024/09/27	<0.050		ug/L	
			C3-fluorene	2024/09/27	<0.050		ug/L	
			Dibenzothiophene	2024/09/27	<0.020		ug/L	
			C1-dibenzothiophene	2024/09/27	<0.020		ug/L	
			C2-dibenzothiophene	2024/09/27	<0.020		ug/L	
			C3-dibenzothiophene	2024/09/27	<0.020		ug/L	
			C4-dibenzothiophene	2024/09/27	<0.020		ug/L	
			C1 phenanthrene/anthracene	2024/09/27	<0.050		ug/L	
			C2 phenanthrene/anthracene	2024/09/27	<0.050		ug/L	
			C3 phenanthrene/anthracene	2024/09/27	<0.050		ug/L	
			C4 phenanthrene/anthracene	2024/09/27	<0.050		ug/L	
			C1 fluoranthene/pyrene	2024/09/27	<0.020		ug/L	
			C2 fluoranthene/pyrene	2024/09/27	<0.020		ug/L	
			C3 fluoranthene/pyrene	2024/09/27	<0.020		ug/L	
			C4 fluoranthene/pyrene	2024/09/27	<0.020		ug/L	
			C1 benzo(a)anthracene/chrysene	2024/09/27	<0.0085		ug/L	
			C2 benzo(a)anthracene/chrysene	2024/09/27	<0.0085		ug/L	
			C3 benzo(a)anthracene/chrysene	2024/09/27	<0.0085		ug/L	
			C4 benzo(a)anthracene/chrysene	2024/09/27	<0.0085		ug/L	
			C1benzobjkfluoranthene/benzoapyrene	2024/09/27	<0.0075		ug/L	
			C2benzobjkfluoranthene/benzoapyrene	2024/09/27	<0.0075		ug/L	
			C1-Acenaphthene	2024/09/27	<0.10		ug/L	
			1-Methylnaphthalene	2024/09/27	<0.10		ug/L	
B532266	CHA	Method Blank	O-TERPHENYL (sur.)	2024/09/25		102	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/25	<0.10		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B532444	S1D	Method Blank	Dissolved Iron (Fe)	2024/09/25	<0.060		mg/L	
			Dissolved Lithium (Li)	2024/09/25	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2024/09/25	<0.20		mg/L	
			Dissolved Manganese (Mn)	2024/09/25	<0.0040		mg/L	
			Dissolved Potassium (K)	2024/09/25	<0.30		mg/L	
			Dissolved Sodium (Na)	2024/09/25	<0.50		mg/L	
			Dissolved Strontium (Sr)	2024/09/25	<0.020		mg/L	
			Dissolved Sulphur (S)	2024/09/25	<0.20		mg/L	
			Dissolved Phosphorus (P)	2024/09/25	<0.10		mg/L	
			Dissolved Barium (Ba)	2024/09/25	<0.010		mg/L	
			Dissolved Silicon (Si)	2024/09/25	<0.50		mg/L	
			Dissolved Boron (B)	2024/09/25	<0.020		mg/L	
			Dissolved Calcium (Ca)	2024/09/25	<0.30		mg/L	
B533769	DVN	Method Blank	Total Dissolved Solids	2024/09/25	<10		mg/L	
B533776	HE1	Method Blank	Total Suspended Solids	2024/09/25	<1.0		mg/L	
B533964	AP1	Method Blank	Chemical Oxygen Demand	2024/09/24	<10		mg/L	
B534429	LYV	Method Blank	Total Sulphide	2024/09/24	<0.0018		mg/L	
B534847	YL7	Method Blank	Total Nitrogen (N)	2024/09/25	<0.020		mg/L	
B535245	MPK	Method Blank	Dissolved Mercury (Hg)	2024/09/26	<0.0019		ug/L	
B535366	MPK	Method Blank	Total Mercury (Hg)	2024/09/26	<0.0019		ug/L	
B536479	YL7	Method Blank	Total Nitrogen (N)	2024/09/25	<0.020		mg/L	
B536625	AFI	Method Blank	Total Ammonia (N)	2024/09/26	<0.015		mg/L	
B538594	JYU	Method Blank	Total Organic Carbon (C)	2024/09/26	<0.50		mg/L	
B539718	JYU	Method Blank	Dissolved Organic Carbon (C)	2024/09/27	<0.50		mg/L	
B539832	KH2	Method Blank	Total Aluminum (Al)	2024/09/27	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/27	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/27	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/27	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/27	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/27	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/27	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/27	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/27	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/27	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/27	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/27	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/27	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/27	<0.0010		mg/L	
			Total Uranium (U)	2024/09/27	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/27	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/27	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/27	<0.0010		mg/L	
B539849	S1D	Method Blank	Total Iron (Fe)	2024/09/27	<0.060		mg/L	
			Total Lithium (Li)	2024/09/27	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/27	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/27	<0.0040		mg/L	
			Total Potassium (K)	2024/09/27	<0.30		mg/L	
			Total Sodium (Na)	2024/09/27	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/27	<0.020		mg/L	
			Total Sulphur (S)	2024/09/27	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/27	<0.10		mg/L	
			Total Barium (Ba)	2024/09/27	<0.010		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Silicon (Si)	2024/09/27	<0.50		mg/L	
			Total Boron (B)	2024/09/27	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/27	<0.30		mg/L	
B540075	KH2	Method Blank	Total Aluminum (Al)	2024/09/27	<0.0030		mg/L	
			Total Chromium (Cr)	2024/09/27	<0.0010		mg/L	
			Total Cobalt (Co)	2024/09/27	<0.00030		mg/L	
			Total Copper (Cu)	2024/09/27	<0.0010		mg/L	
			Total Lead (Pb)	2024/09/27	<0.00020		mg/L	
			Total Antimony (Sb)	2024/09/27	<0.00060		mg/L	
			Total Molybdenum (Mo)	2024/09/27	<0.00020		mg/L	
			Total Nickel (Ni)	2024/09/27	<0.00050		mg/L	
			Total Selenium (Se)	2024/09/27	<0.00020		mg/L	
			Total Silver (Ag)	2024/09/27	<0.00010		mg/L	
			Total Arsenic (As)	2024/09/27	<0.00020		mg/L	
			Total Thallium (Tl)	2024/09/27	<0.00020		mg/L	
			Total Tin (Sn)	2024/09/27	<0.0010		mg/L	
			Total Titanium (Ti)	2024/09/27	<0.0010		mg/L	
			Total Uranium (U)	2024/09/27	<0.00010		mg/L	
			Total Vanadium (V)	2024/09/27	<0.0010		mg/L	
			Total Zinc (Zn)	2024/09/27	<0.0030		mg/L	
			Total Beryllium (Be)	2024/09/27	<0.0010		mg/L	
B540078	S1D	Method Blank	Total Iron (Fe)	2024/09/28	<0.060		mg/L	
			Total Lithium (Li)	2024/09/28	<0.020		mg/L	
			Total Magnesium (Mg)	2024/09/28	<0.20		mg/L	
			Total Manganese (Mn)	2024/09/28	<0.0040		mg/L	
			Total Potassium (K)	2024/09/28	<0.30		mg/L	
			Total Sodium (Na)	2024/09/28	<0.50		mg/L	
			Total Strontium (Sr)	2024/09/28	<0.020		mg/L	
			Total Sulphur (S)	2024/09/28	<0.20		mg/L	
			Total Phosphorus (P)	2024/09/28	<0.10		mg/L	
			Total Barium (Ba)	2024/09/28	<0.010		mg/L	
			Total Silicon (Si)	2024/09/28	<0.50		mg/L	
			Total Boron (B)	2024/09/28	<0.020		mg/L	
			Total Calcium (Ca)	2024/09/28	<0.30		mg/L	
B531561	TNY	RPD [CWA324-01]	Turbidity	2024/09/21	0.63		%	20
B533769	DVN	RPD [CWA324-01]	Total Dissolved Solids	2024/09/25	1.4		%	20
B538594	JYU	RPD [CWA324-05]	Total Organic Carbon (C)	2024/09/26	NC		%	20
B531702	MOP	RPD [CWA325-02]	True Colour	2024/09/21	18		%	20
B532263	DM	RPD [CWA325-09]	Acenaphthene	2024/09/27	NC		%	30
			Acenaphthylene	2024/09/27	NC		%	30
			Acridine	2024/09/27	NC		%	30
			Anthracene	2024/09/27	NC		%	30
			Benzo(a)anthracene	2024/09/27	NC		%	30
			Benzo(b&j)fluoranthene	2024/09/27	NC		%	30
			Benzo(k)fluoranthene	2024/09/27	NC		%	30
			Benzo(g,h,i)perylene	2024/09/27	NC		%	30
			Benzo(c)phenanthrene	2024/09/27	NC		%	30
			Benzo(a)pyrene	2024/09/27	NC		%	30
			Benzo(e)pyrene	2024/09/27	NC		%	30
			Chrysene	2024/09/27	NC		%	30
			Dibenz(a,h)anthracene	2024/09/27	NC		%	30
			Fluoranthene	2024/09/27	NC		%	30

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			Fluorene	2024/09/27	NC		%	30
			Indeno(1,2,3-cd)pyrene	2024/09/27	NC		%	30
			Indeno(1,2,3-cd)fluoranthene	2024/09/27	NC		%	30
			2-Methylnaphthalene	2024/09/27	NC		%	30
			Naphthalene	2024/09/27	NC		%	30
			Phenanthrene	2024/09/27	NC		%	30
			Perylene	2024/09/27	NC		%	30
			Pyrene	2024/09/27	NC		%	30
			Quinoline	2024/09/27	NC		%	30
			Retene	2024/09/27	NC		%	30
			C1-Naphthalene	2024/09/27	NC		%	30
			C3-Naphthalene	2024/09/27	NC		%	30
			C4-Naphthalene	2024/09/27	NC		%	30
			C2-Naphthalene	2024/09/27	NC		%	30
			Biphenyl	2024/09/27	NC		%	30
			C1-biphenyl	2024/09/27	NC		%	30
			C2-biphenyl	2024/09/27	NC		%	30
			C1-fluorene	2024/09/27	NC		%	30
			C2-fluorene	2024/09/27	NC		%	30
			C3-fluorene	2024/09/27	NC		%	30
			Dibenzothiophene	2024/09/27	NC		%	30
			C1-dibenzothiophene	2024/09/27	NC		%	30
			C2-dibenzothiophene	2024/09/27	NC		%	30
			C3-dibenzothiophene	2024/09/27	NC		%	30
			C4-dibenzothiophene	2024/09/27	NC		%	30
			C1 phenanthrene/anthracene	2024/09/27	NC		%	30
			C2 phenanthrene/anthracene	2024/09/27	NC		%	30
			C3 phenanthrene/anthracene	2024/09/27	NC		%	30
			C4 phenanthrene/anthracene	2024/09/27	NC		%	30
			C1 fluoranthene/pyrene	2024/09/27	NC		%	30
			C2 fluoranthene/pyrene	2024/09/27	NC		%	30
			C3 fluoranthene/pyrene	2024/09/27	NC		%	30
			C4 fluoranthene/pyrene	2024/09/27	NC		%	30
			C1 benzo(a)anthracene/chrysene	2024/09/27	NC		%	30
			C2 benzo(a)anthracene/chrysene	2024/09/27	NC		%	30
			C3 benzo(a)anthracene/chrysene	2024/09/27	NC		%	30
			C4 benzo(a)anthracene/chrysene	2024/09/27	NC		%	30
			C1benzobjkfluoranthene/benzoapyrene	2024/09/27	NC		%	30
			C2benzobjkfluoranthene/benzoapyrene	2024/09/27	NC		%	30
			C1-Acenaphthene	2024/09/27	NC		%	30
			1-Methylnaphthalene	2024/09/27	NC		%	30
B532266	CHA	RPD [CWA325-10]	F2 (C10-C16 Hydrocarbons)	2024/09/25	NC		%	30
B531702	MOP	Matrix Spike [CWA325-02]	True Colour	2024/09/21		98	%	80 - 120
B533769	DVN	Matrix Spike [CWA324-01]	Total Dissolved Solids	2024/09/25		98	%	80 - 120
B534429	LYV	Matrix Spike [CWA324-07]	Total Sulphide	2024/09/24		34 (1)	%	80 - 120
B538594	JYU	Matrix Spike [CWA324-05]	Total Organic Carbon (C)	2024/09/26		101	%	75 - 125
B526827	RRA	LCS	Oil and grease	2024/09/23		91	%	70 - 130
B528926	RRA	LCS	Total Petroleum Hydrocarbon	2024/09/24		93	%	70 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B531561	TNY	LCS	Turbidity	2024/09/21		100	%	80 - 120
B531592	ISW	LCS	Nitrite (N)	2024/09/21		98	%	80 - 120
			Nitrate plus Nitrite (N)	2024/09/21		97	%	80 - 120
B531702	MOP	LCS	True Colour	2024/09/21		97	%	80 - 120
B531750	JAB	LCS	Dissolved Aluminum (Al)	2024/09/22		100	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/22		99	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/22		100	%	80 - 120
			Dissolved Copper (Cu)	2024/09/22		100	%	80 - 120
			Dissolved Lead (Pb)	2024/09/22		104	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/22		100	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/22		102	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/22		99	%	80 - 120
			Dissolved Selenium (Se)	2024/09/22		102	%	80 - 120
			Dissolved Silver (Ag)	2024/09/22		99	%	80 - 120
			Dissolved Arsenic (As)	2024/09/22		100	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/22		99	%	80 - 120
			Dissolved Tin (Sn)	2024/09/22		97	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/22		100	%	80 - 120
			Dissolved Uranium (U)	2024/09/22		99	%	80 - 120
			Dissolved Vanadium (V)	2024/09/22		98	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/22		101	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/22		97	%	80 - 120
B531764	ISW	LCS	Orthophosphate (P)	2024/09/21		99	%	80 - 120
B531943	AFI	LCS	Chloride (Cl)	2024/09/22		100	%	80 - 120
			Sulphate (SO4)	2024/09/22		100	%	80 - 120
B532062	WPK	LCS	1,4-Difluorobenzene (sur.)	2024/09/23		91	%	50 - 140
			4-Bromofluorobenzene (sur.)	2024/09/23		105	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2024/09/23		93	%	50 - 140
			Benzene	2024/09/23		91	%	60 - 130
			Toluene	2024/09/23		110	%	60 - 130
			Ethylbenzene	2024/09/23		101	%	60 - 130
			m & p-Xylene	2024/09/23		104	%	60 - 130
			o-Xylene	2024/09/23		102	%	60 - 130
			F1 (C6-C10)	2024/09/23		105	%	60 - 140
B532100	AYE	LCS	Alkalinity (Total as CaCO3)	2024/09/23		101	%	80 - 120
B532102	AYE	LCS	pH	2024/09/23		100	%	97 - 103
B532103	AYE	LCS	Conductivity	2024/09/23		100	%	90 - 110
B532263	DM	LCS	D10-ANTHRACENE (sur.)	2024/09/27		112	%	50 - 130
			TERPHENYL-D14 (sur.)	2024/09/27		121	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2024/09/27		85	%	50 - 130
			D8-NAPHTHALENE (sur.)	2024/09/27		66	%	50 - 130
			Acenaphthene	2024/09/27		81	%	50 - 130
			Acenaphthylene	2024/09/27		76	%	50 - 130
			Acridine	2024/09/27		84	%	50 - 130
			Anthracene	2024/09/27		77	%	50 - 130
			Benzo(a)anthracene	2024/09/27		98	%	50 - 130
			Benzo(b&j)fluoranthene	2024/09/27		97	%	50 - 130
			Benzo(k)fluoranthene	2024/09/27		90	%	50 - 130
			Benzo(g,h,i)perylene	2024/09/27		90	%	50 - 130
			Benzo(c)phenanthrene	2024/09/27		95	%	50 - 130
			Benzo(a)pyrene	2024/09/27		97	%	50 - 130
			Benzo(e)pyrene	2024/09/27		85	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chrysene	2024/09/27		92	%	50 - 130
			Dibenz(a,h)anthracene	2024/09/27		98	%	50 - 130
			Fluoranthene	2024/09/27		97	%	50 - 130
			Fluorene	2024/09/27		76	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2024/09/27		102	%	50 - 130
			2-Methylnaphthalene	2024/09/27		75	%	50 - 130
			Naphthalene	2024/09/27		56	%	50 - 130
			Phenanthrene	2024/09/27		75	%	50 - 130
			Perylene	2024/09/27		79	%	50 - 130
			Pyrene	2024/09/27		99	%	50 - 130
			Quinoline	2024/09/27		96	%	50 - 130
			C1-Naphthalene	2024/09/27		53	%	50 - 130
			C3-Naphthalene	2024/09/27		46 (1)	%	50 - 130
			C2-Naphthalene	2024/09/27		45 (1)	%	50 - 130
			C1-biphenyl	2024/09/27		41 (1)	%	50 - 130
			C1 phenanthrene/anthracene	2024/09/27		99	%	50 - 130
			C2 phenanthrene/anthracene	2024/09/27		96	%	50 - 130
			C1 fluoranthene/pyrene	2024/09/27		101	%	50 - 130
			C2 benzo(a)anthracene/chrysene	2024/09/27		87	%	30 - 130
			1-Methylnaphthalene	2024/09/27		75	%	50 - 130
B532266	CHA	LCS	O-TERPHENYL (sur.)	2024/09/24		96	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2024/09/24		88	%	60 - 140
B532444	S1D	LCS	Dissolved Iron (Fe)	2024/09/25		92	%	80 - 120
			Dissolved Lithium (Li)	2024/09/25		93	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/25		89	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/25		89	%	80 - 120
			Dissolved Potassium (K)	2024/09/25		94	%	80 - 120
			Dissolved Sodium (Na)	2024/09/25		93	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/25		88	%	80 - 120
			Dissolved Sulphur (S)	2024/09/25		87	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/25		87	%	80 - 120
			Dissolved Barium (Ba)	2024/09/25		94	%	80 - 120
			Dissolved Silicon (Si)	2024/09/25		83	%	80 - 120
			Dissolved Boron (B)	2024/09/25		90	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/25		92	%	80 - 120
B533769	DVN	LCS	Total Dissolved Solids	2024/09/25		98	%	80 - 120
B533776	HE1	LCS	Total Suspended Solids	2024/09/25		97	%	80 - 120
B533964	AP1	LCS	Chemical Oxygen Demand	2024/09/24		99	%	80 - 120
B534429	LYV	LCS	Total Sulphide	2024/09/24		106	%	80 - 120
B534847	YL7	LCS	Total Nitrogen (N)	2024/09/25		105	%	80 - 120
B535245	MPK	LCS	Dissolved Mercury (Hg)	2024/09/26		99	%	80 - 120
B535366	MPK	LCS	Total Mercury (Hg)	2024/09/26		98	%	80 - 120
B536479	YL7	LCS	Total Nitrogen (N)	2024/09/25		109	%	80 - 120
B536625	AFI	LCS	Total Ammonia (N)	2024/09/26		106	%	80 - 120
B538594	JYU	LCS	Total Organic Carbon (C)	2024/09/26		104	%	80 - 120
B539718	JYU	LCS	Dissolved Organic Carbon (C)	2024/09/27		94	%	80 - 120
B539832	KH2	LCS	Total Aluminum (Al)	2024/09/27		101	%	80 - 120
			Total Chromium (Cr)	2024/09/27		96	%	80 - 120
			Total Cobalt (Co)	2024/09/27		95	%	80 - 120
			Total Copper (Cu)	2024/09/27		94	%	80 - 120
			Total Lead (Pb)	2024/09/27		95	%	80 - 120
			Total Antimony (Sb)	2024/09/27		101	%	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
			Total Molybdenum (Mo)	2024/09/27		98	%	80 - 120
			Total Nickel (Ni)	2024/09/27		95	%	80 - 120
			Total Selenium (Se)	2024/09/27		100	%	80 - 120
			Total Silver (Ag)	2024/09/27		96	%	80 - 120
			Total Arsenic (As)	2024/09/27		99	%	80 - 120
			Total Thallium (Tl)	2024/09/27		93	%	80 - 120
			Total Tin (Sn)	2024/09/27		99	%	80 - 120
			Total Titanium (Ti)	2024/09/27		95	%	80 - 120
			Total Uranium (U)	2024/09/27		99	%	80 - 120
			Total Vanadium (V)	2024/09/27		97	%	80 - 120
			Total Zinc (Zn)	2024/09/27		96	%	80 - 120
			Total Beryllium (Be)	2024/09/27		98	%	80 - 120
B539849	S1D	LCS	Total Iron (Fe)	2024/09/27		110	%	80 - 120
			Total Lithium (Li)	2024/09/27		87	%	80 - 120
			Total Magnesium (Mg)	2024/09/27		103	%	80 - 120
			Total Manganese (Mn)	2024/09/27		105	%	80 - 120
			Total Potassium (K)	2024/09/27		91	%	80 - 120
			Total Sodium (Na)	2024/09/27		88	%	80 - 120
			Total Strontium (Sr)	2024/09/27		107	%	80 - 120
			Total Sulphur (S)	2024/09/27		101	%	80 - 120
			Total Phosphorus (P)	2024/09/27		102	%	80 - 120
			Total Barium (Ba)	2024/09/27		107	%	80 - 120
			Total Silicon (Si)	2024/09/27		101	%	80 - 120
			Total Boron (B)	2024/09/27		97	%	80 - 120
			Total Calcium (Ca)	2024/09/27		91	%	80 - 120
B540075	KH2	LCS	Total Aluminum (Al)	2024/09/27		123 (1)	%	80 - 120
			Total Chromium (Cr)	2024/09/27		98	%	80 - 120
			Total Cobalt (Co)	2024/09/27		98	%	80 - 120
			Total Copper (Cu)	2024/09/27		94	%	80 - 120
			Total Lead (Pb)	2024/09/27		97	%	80 - 120
			Total Antimony (Sb)	2024/09/27		101	%	80 - 120
			Total Molybdenum (Mo)	2024/09/27		100	%	80 - 120
			Total Nickel (Ni)	2024/09/27		95	%	80 - 120
			Total Selenium (Se)	2024/09/27		83	%	80 - 120
			Total Silver (Ag)	2024/09/27		96	%	80 - 120
			Total Arsenic (As)	2024/09/27		89	%	80 - 120
			Total Thallium (Tl)	2024/09/27		100	%	80 - 120
			Total Tin (Sn)	2024/09/27		99	%	80 - 120
			Total Titanium (Ti)	2024/09/27		98	%	80 - 120
			Total Uranium (U)	2024/09/27		100	%	80 - 120
			Total Vanadium (V)	2024/09/27		100	%	80 - 120
			Total Zinc (Zn)	2024/09/27		82	%	80 - 120
			Total Beryllium (Be)	2024/09/27		106	%	80 - 120
B540078	S1D	LCS	Total Iron (Fe)	2024/09/28		112	%	80 - 120
			Total Lithium (Li)	2024/09/28		105	%	80 - 120
			Total Magnesium (Mg)	2024/09/28		105	%	80 - 120
			Total Manganese (Mn)	2024/09/28		110	%	80 - 120
			Total Potassium (K)	2024/09/28		104	%	80 - 120
			Total Sodium (Na)	2024/09/28		104	%	80 - 120
			Total Strontium (Sr)	2024/09/28		99	%	80 - 120
			Total Sulphur (S)	2024/09/28		108	%	80 - 120
			Total Phosphorus (P)	2024/09/28		110	%	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
			Total Barium (Ba)	2024/09/28		104	%	80 - 120
			Total Silicon (Si)	2024/09/28		106	%	80 - 120
			Total Boron (B)	2024/09/28		102	%	80 - 120
			Total Calcium (Ca)	2024/09/28		104	%	80 - 120
B534847	YL7	SRM	Total Nitrogen (N)	2024/09/25		104	%	80 - 120
B536479	YL7	SRM	Total Nitrogen (N)	2024/09/25		100	%	80 - 120

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

LCS: 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 (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.

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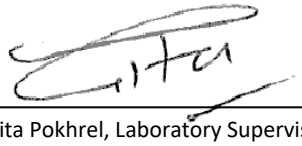
Bureau Veritas Job #: C474983
Report Date: 2024/10/04

Advisian
Task Order#: 417085-54419
Site#: N/A
Site Location: NWT
Project #: 417085-54419

VALIDATION SIGNATURE PAGE

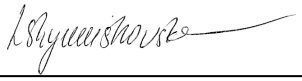
The analytical data and all QC contained in this report were reviewed and validated by:

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

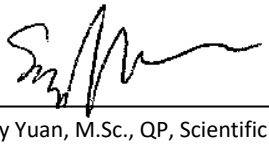


Gita Pokhrel, Laboratory Supervisor

Janet Gao, B.Sc., QP, Supervisor, Organics



Luba Shymushovska, B.Sc., QP, Senior Analyst, Organics



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

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

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VALIDATION SIGNATURE PAGE(CONT'D)

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

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

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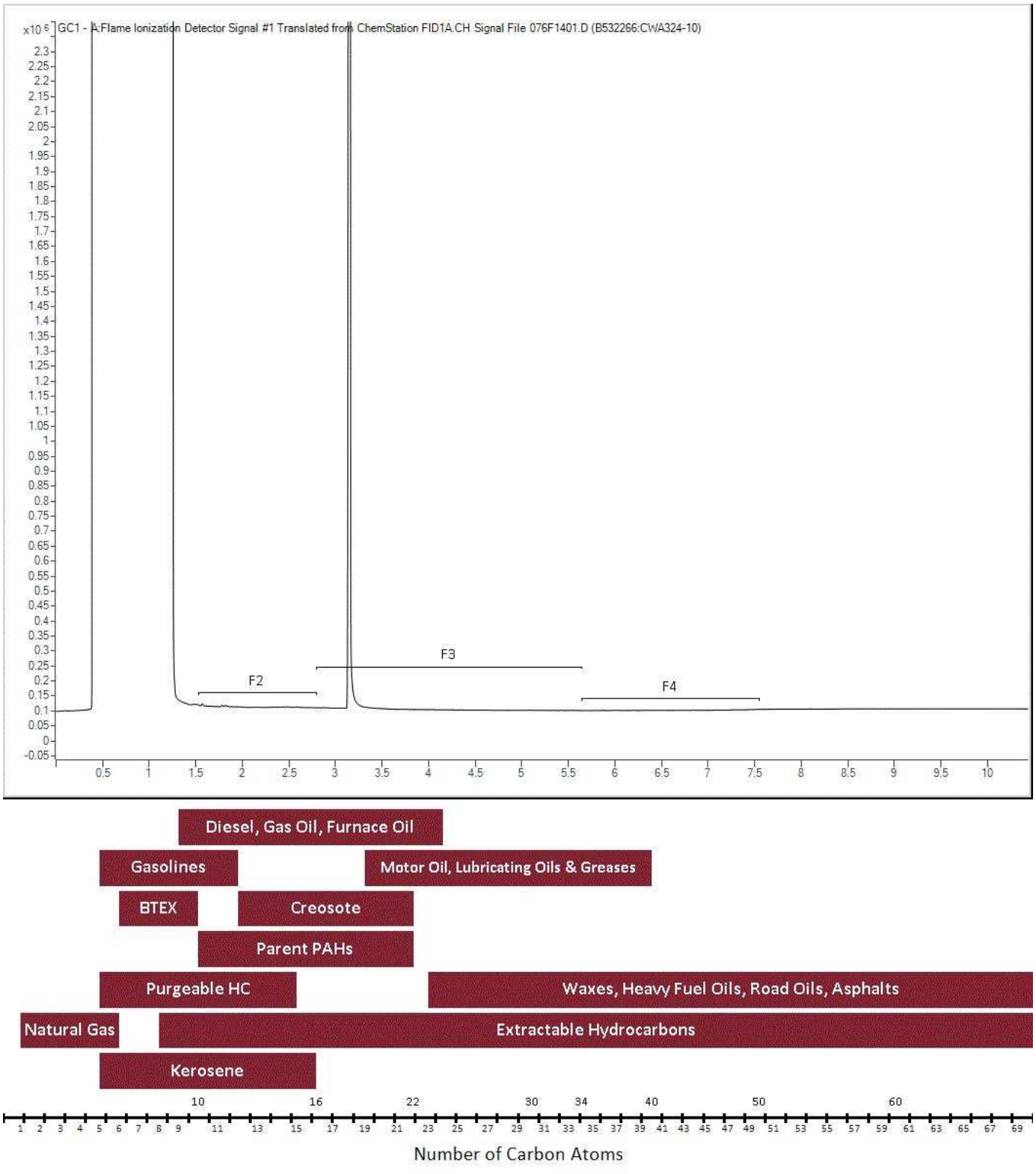
Bureau Veritas Job #: C474983
Report Date: 2024/10/04
Bureau Veritas Sample: CWA324

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-06

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

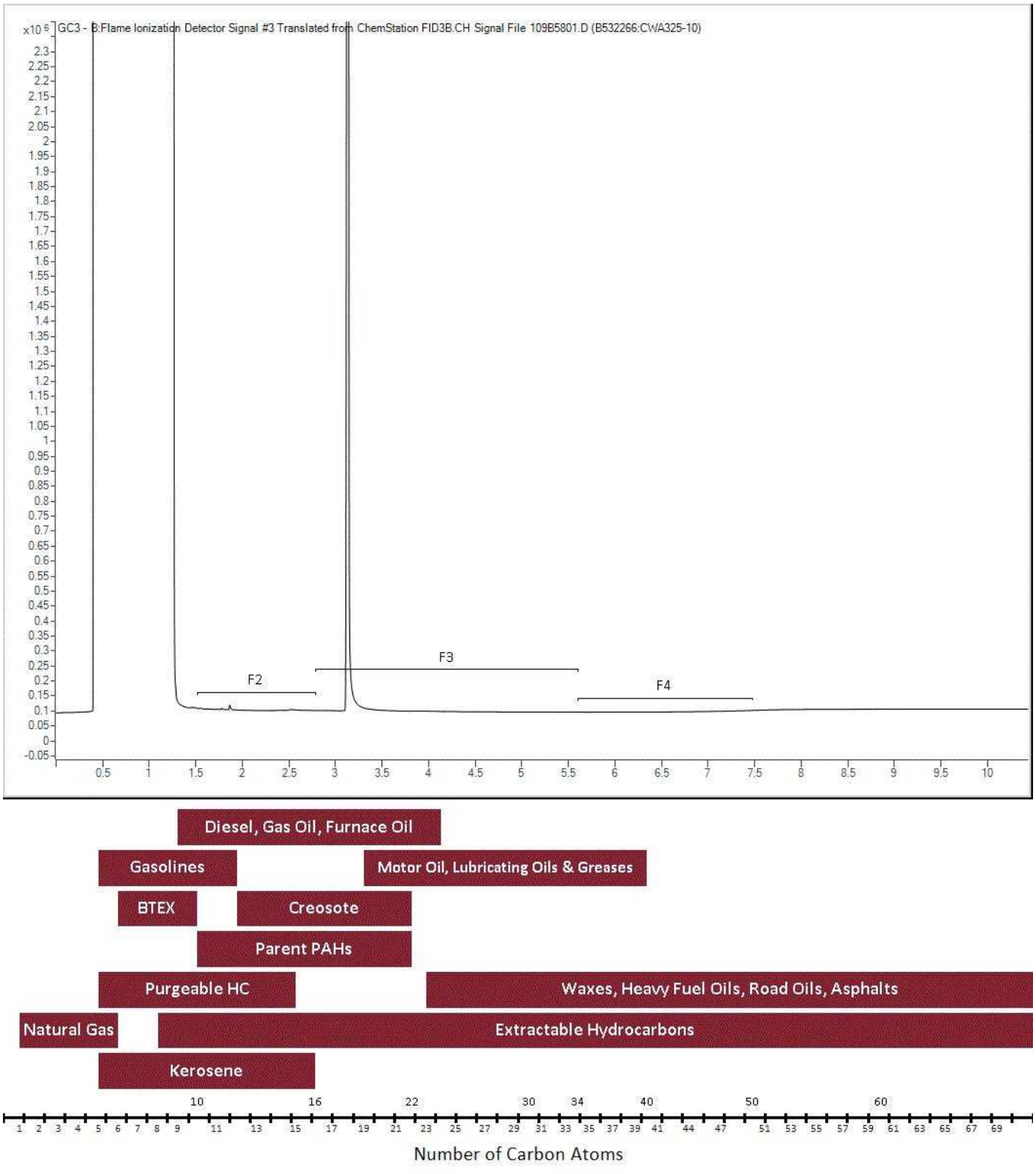


Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Bureau Veritas Job #: C474983
Report Date: 2024/10/04
Bureau Veritas Sample: CWA325

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-07

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



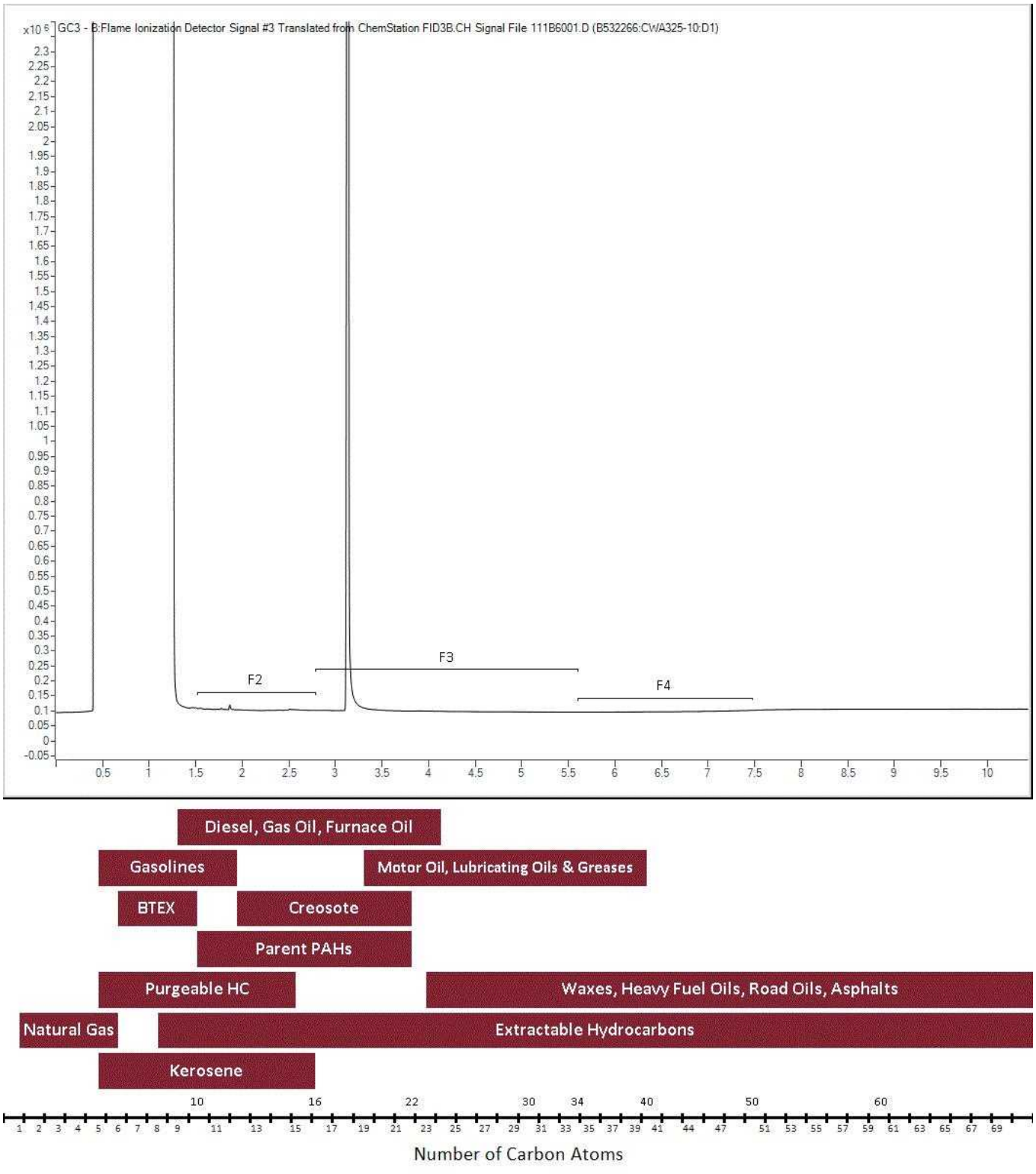
hpchem20\HPchem\1\DATA\2024\09\RUN0924

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

Bureau Veritas Job #: C474983
Report Date: 2024/10/04
Bureau Veritas Sample: CWA325 Lab-Dup

Advisian
Task Order#:417085-54419Line Item:
Site#: N/A
Site Location: NWT
Client ID: AEMP-DS-07

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



hpchem20\HPchem\1\DATA\2024\09\RUN0924

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

Maxxam
A Bureau Veritas Group Company

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Fax: (403) 735-2240
Toll Free: (800) 386-7247

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Fax: (780) 450-4187
Toll Free: (800) 386-7247

EXXON MOBIL/IMPERIAL OIL - MAXXAM CHAIN-OF-CUSTODY RECORD

Page 1 of 1

C of C # 292227

INVOICE INFORMATION	REPORT INFORMATION
Company Name: ☒ Imperial Oil ☐ ExxonMobil	Company Name: WORLEY
Contact Name: ALEX HAIGH	Contact Name: ALEX HAIGH
Address: 419 QUARRY PARK BLVD SE CALGARY AB T2C 3E7	Address: 419 QUARRY PARK BLVD SE CALGARY AB T2C 3E7
Email: ALEX.HAIGH@WORLEY.COM	Email: ALEX.HAIGH@WORLEY.COM
Ph: 587-897-6249	Ph: 587-897-6249
Sampler Name (Print): STACY GIBB	Consultant Project #: 417085-54419-24200

	FIELD SAMPLE ID	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (YYYY/MM/DD)	TIME (24 HR)	FIELD FILTERED & PRESERVED	LAB FILTRATION REQUIRED	ANALYSIS REQUESTED: VOC	PAH	PHCs (FRACTIONS 1-2 PLUS BTEX)	PHCs (FRACTIONS 1-4 PLUS BTEX)	PHCs (FRACTIONS 2-4)	PHCs (FRACTION 1 PLUS BTEX)	GRAIN SIZE (75 MICRON)	TEXTURE (% SAND, SILT, CLAY)	PARTICLE SIZE DISTRIBUTION WITH GRAPH	REGULATED METALS TOT ☒ DIS ☒	MERCURY TOTAL ☒ DISSOLVED ☒	SALINITY SOIL	FERTILIZER SOIL	FERTILIZER WATER	NUTRIENTS SOIL	ROUTINE POTABILITY	pH ☐ EC ☐ ALKALINITY ☐	BASIC CLASS II LANDFILL PKG	TRUE COLOUR, TSS, TDS, TURBIDITY	OIL + GREASE	TOC, DOC, SULPHIDE	NITRATE, NITRITE, AMMONIA (TOTAL), TKN	ORTHOPHOSPHATE	SULFUR (TOTAL & DISSOLVED)	COD	ALKYLATED PAH, TPH
1	AEMP-DS-06		X			18	2024/09/18	12:56	X			X	X								X	X				X			X	X	X	X	X	X	X	X
2	AEMP-DS-07		X			18	2024/09/18	13:21	X			X	X								X	X				X			X	X	X	X	X	X	X	X
3																																					
4																																					
5																																					
6																																					
7																																					
8																																					
9																																					
10																																					

med2-2024-09-736

IOL SITE LOCATION: NORMAN WELLS, NT

IOL PROJECT # (if applicable): N/A

MAXXAM TASK ORDER # OR SERVICE ORDER # + LINE ITEM: 417085-54419-24200

REGULATORY CRITERIA / DETECTION LIMITS:
☐ Alberta Tier 1 ☐ CDWG
☐ SEQG (SK) ☐ NoSC (SK)
☒ CCME (incl. level) FAL ☐ Other

SPECIAL INSTRUCTIONS: EMAILS CANADA.CHEMISTRY@WORLEY.COM CACAL_IOL_DATATRACK@WORLEY.COM STACY.GIBB@WORLEY.COM
IES A26@1436

JARS USED & NOT SUBMITTED (Enter N/A for Water): N/A

TURNAROUND TIME
Standard (5 days) ☒
Rush (3 days) ☐
(2 days) ☐
(1 day) ☐
(same day) ☐
Date Required

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT	✓						
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID # MCAL	TEMP °C	1	2	3
SEAL PRESENT	✓						
SEAL INTACT	✓						
COOLING MEDIA PRESENT	✓						

	YES	NO	COOLER ID #	TEMP °C	1	2	3
SEAL PRESENT							
SEAL INTACT							
COOLING MEDIA PRESENT							

LAB USE ONLY
MAXXAM JOB # C474983

RELINQUISHED BY:		DATE:	TIME (24 HR)	RECEIVED BY:		DATE:	TIME (24 HR)
1. Alex Haigh		2024/09/19	10:00	1.	BRENTON MAH	2024/09/20	17:08
2.	BRENTON MAH	2024/09/20	19:00	2.	SEAN ENZ	2024/09/21	07:00
3.				3.			

SAMPLES
LABELED BY: KLN
VERIFIED BY: SIC

COC-1010 (06/2016) IOL-AB

White: Maxxam Yellow: Client

SGS AXYS

2045 Mills Road West
Sidney, BC, Canada V8L5X2

TEL: (250) 655-5800
TOLL-FREE: 1-888-373-0881

SGS AXYS Client No.: 4608

Client Address: Worley Canada Services Ltd
49 Quarry Park BLVD SE
Calgary, AB, CA, T2C 5H9

The SGS AXYS contact for these data is Suma Thomas.

BATCH SUMMARY

Batch ID: WG92745	***Date:*** 05-Mar-2025
Analysis Type: PAH	***Matrix Type:*** SPMD

BATCH MAKEUP

Contract: 4608

Samples:

L41307-1	Day Zero-1
L41307-4	Trip Blank 19-JUN-24
L41307-6	Field Blank 19-JUN-24
L41307-8	AEMP-US-01 19-JUL-24
L41307-9	AEMP-US-02 19-JUL-24
L41307-10	AEMP-US-03 19-JUL-24
L41307-11	AEMP-US-04 18-JUL-24
L41307-12	AEMP-US-05 18-JUL-24
L41307-13	AEMP-DS-01 18-JUL-24
L41307-14	AEMP-DS-02 20-JUL-24
L41307-15	AEMP-DS-03 19-JUL-24
L41307-16	AEMP-DS-04 20-JUL-24
L41307-17	AEMP-DS-05 19-JUL-24
L41307-18	AEMP-DS-08 19-JUL-24
L41307-19	AEMP-DS-09 19-JUL-24
L41307-20	Dup 1 20-JUL-24

Blank: WG92745-101

Reference or Spike: WG92745-102

Comments:

1. Data are considered final.
2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data.
3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.
4. In the OPR, the recoveries of fluoranthene, pyrene, 1,2,6-trimethylphenanthrene, retene, and 3-methylfluoranthene/benzo[a]fluorene exceed the upper method control limits, as indicated by the N flags. These five analytes, plus the C3- and C4-phenanthrenes/anthracenes, and the alkyl fluoranthenes/pyrenes, may be overestimated to a similar degree in the samples.

Contract 4608 - Day Zero SPMDs

SAMPLE	Client ID	Receive Date
41307-1	Day Zero-1	30-Apr-24
41307-2	Day Zero-2	30-Apr-24
41307-3	Day Zero-3	30-Apr-24

11:00.

SGS AXYS

SGS AXYS Analytical Services Chain of Custody

Mills Road West, Sidney, British Columbia, Canada V8L 5X2
TEL: (250) 655-5800 TOLL FREE 1-888-373-0881 FAX: (250) 655-5811

2045 SGS AXYS CLIENT #: 4608

PAGE 1 OF 1

Client / Reporting Information	Invoice to	Analysis Requested
Company Name Worley Consulting	Same as report to (Y / N). If no, please fill in below YES	
Address - 49 Quarry Park BLVD SE, Calgary, AB T2C 5H9	Company - Worley Canada Services Ltd.	
	Address - 49 Quarry Park Blvd SE, Calgary AB T2C 5H9	
Project Contact Alex Haigh; Stacy Gibb	Contact Stacy Gibb	
Phone # 587 897 6249; 587-434-5393	Email stacy.gibb@worley.com	
Email alex.haigh@worley.com; stacy.gibb@worley.com	Client Purchase Order # or Quote #	
Project Name or Number: Norman Wells AEMP 417085-54419.24200	Sampler Signature: Name: Alex Haigh, Stacy Gibb	

Client Sample Identification	Matrix	Deploy Date/Time (YYYY-MM-DD/HH:MM)	Retrieve Date/Time (YYYY-MM-DD/HH:MM)	Container Type	# Strips	SGS AXYS Lab Sample ID (Lab use only)	PAHs	Alkylated PAHs			
AEMP-US-01	SPMD	2024-06-20/10:00	2024-07-19/15:20	SPMD	3	L41307-8	x	x			
AEMP-US-02	SPMD	2024-06-20/10:45	2024-07-19/14:02	SPMD	3	-9	x	x			
AEMP-US-03	SPMD	2024-06-20/11:20	2024-07-19/13:26	SPMD	3	-10	x	x			
AEMP-US-04	SPMD	2024-06-21/13:15	2024-07-18/15:20	SPMD	3	-11	x	x			
AEMP-US-05	SPMD	2024-06-20/12:30	2024-07-18/12:40	SPMD	3	-12	x	x			
AEMP-DS-01	SPMD	2024-06-19/11:40	2024-07-18/11:00	SPMD	3	-13	x	x			
AEMP-DS-02	SPMD	2024-06-21/10:20	2024-07-20/17:05	SPMD	3	-14	x	x			
AEMP-DS-03	SPMD	2024-06-20/14:15	2024-07-19/12:18	SPMD	3	-15	x	x			
AEMP-DS-04	SPMD	2024-06-19/15:40	2024-07-20/16:26	SPMD	3	-16	x	x			
AEMP-DS-05	SPMD	2024-06-20/12:30	2024-07-19/09:36	SPMD	3	-17	x	x			
AEMP-DS-06	NA	NA	NA	NA	NA	NA	NA	NA			
AEMP-DS-07	NA	NA	NA	NA	NA	NA	NA	NA			
AEMP-DS-08	SPMD	2024-06-20/13:00	2024-07-19/10:34	SPMD	3	-18	x	x			
AEMP-DS-09	SPMD	2024-06-20/13:30	2024-07-19/11:36	SPMD	3	-19	x	x			
Trip Blank	SPMD	NA	6/19/2024	SPMD	3	-4	x	x			
Field Blank	SPMD	NA	6/19/2024	SPMD	3	-6	x	x			
Day Zero Rec'd 30 APR 2024 11:00	SPMD			SPMD	1	-1	x	x			
Dup 1	SPMD	NA	2024-07-20/17:05	SPMD	2	-20	x	x			

Comments/Remarks

Dup 1 - please use a 2 strip from AEMP-DS-02 and analyze as a separate sample.

Sample Custody

Relinquished by (Signature):	Date: 2024-08-29	Received by (Signature):	Date: 20 AUG 2024
Stacy Gibb SG	Time: 08:00		Time: 08:30

SGS AXYS

SGS AXYS

SGS AXYS Analytical Services Chain of Custody

Mills Road West, Sidney, British Columbia, Canada V8L 5X2
TEL: (250) 655-5800 TOLL FREE 1-888-373-0881 FAX: (250) 655-5811

2045 SGS AXYS CLIENT #: 4608

PAGE 1 OF 1

Client / Reporting Information	Invoice to
Company Name Worley Consulting	Same as report to (Y / N). If no, please fill in below YES
Address - 49 Quarry Park BLVD SE, Calgary, AB T2C 5H9	Company - Worley Canada Services Ltd.
	Address - 49 Quarry Park Blvd SE, Calgary AB T2C 5H9
Project Contact Alex Haigh; Stacy Gibb	Contact Stacy Gibb
Phone # 587 897 6249; 587-434-5393	Email stacy.gibb@worley.com
Email alex.haigh@worley.com; stacy.gibb@worley.com	Client Purchase Order # or Quote #
Project Name or Number: Norman Wells AEMP 417085-54419.24200	Sampler Signature: Name: Alex Haigh, Stacy Gibb

Client Sample Identification	Matrix	Deploy Date/Time (YYYY-MM-DD/HH:MM)	Retrieve Date/Time (YYYY-MM-DD/HH:MM)	Container Type	# Strips	SGS AXYS Lab Sample ID (Lab use only)	Analysis Requested: PAHs	Analysis Requested: Alkylated PAHs
AEMP-US-01	SPMD	2024-07-19/15:20	2024-08-15/15:45	SPMD	3	L41307-21	x	x
AEMP-US-02	SPMD	2024-07-19/14:10	2024-08-15/16:53	SPMD	3	-22	x	x
AEMP-US-03	SPMD	2024-07-19/13:20	2024-08-16/09:03	SPMD	3	-23	x	x
AEMP-US-04	SPMD	2024-07-18/15:25	2024-08-16/16:03	SPMD	3	-24	x	x
AEMP-US-05	SPMD	2024-07-18/12:40	2024-08-16/15:20	SPMD	3	-25	x	x
AEMP-DS-01	SPMD	2024-07-19/11:00	2024-08-16/13:31	SPMD	3	-26	x	x
AEMP-DS-02	SPMD	2024-07-20/17:05	2024-08-16/12:21	SPMD	3	-27	x	x
AEMP-DS-03	SPMD	2024-07-19/12:20	2024-08-15/11:20	SPMD	3	-28	x	x
AEMP-DS-04	NA	NA	NA	NA	NA		NA	NA
AEMP-DS-05	NA	NA	NA	NA	NA		NA	NA
AEMP-DS-06	SPMD	2024-07-17/12:00	2024-08-14/10:56	SPMD	3	-29	x	x
AEMP-DS-07	SPMD	2024-07-17/12:30	2024-08-14/11:52	SPMD	3	-30	x	x
AEMP-DS-08	SPMD	2024-07-19/10:34	2024-08-15/13:45	SPMD	3	-31	x	x
AEMP-DS-09	SPMD	2024-07-19/11:36	2024-08-15/12:07	SPMD	3	-32	x	x
Trip Blank	SPMD	NA	2024-08-15/11:20	SPMD	3	-5	x	x
Field Blank	SPMD	NA	2024-08-15/11:20	SPMD	3	-7	x	x
Day Zero Rec'd 30APR2024 11:00	SPMD			SPMD	1	-2	x	x
Dup 1	SPMD	2024-07-20/17:05	2024-08-16/12:21	SPMD	2	-33	x	x

Comments/Remarks

Dup 1 - please use a 2 strip from AEMP-DS-02 and analyze as a separate sample.

Sample Custody

Relinquished by (Signature):	Date: 2024-08-29	Received by (Signature):	Date: 20AUG 2024
Stacy Gibb	Time: 08:00		Time: 08:30

SGS AXYS

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
Day Zero-1
Sample Collection:
N/A

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L41307-1
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	30-Apr-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	22-Jan-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	12-Feb-2025 **Time:** 20:44:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H0782.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H0781.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		43.8	2.27 (S)	0.06	1.006
Acenaphthylene	208-96-8	ND		1.70 (S)		
Acenaphthene	83-32-9		7.50	1.47 (S)	1.22	1.047
2-Methylfluorene	1430-97-3	ND		1.79 (S)		
C2 Phenanthrenes/Anthracenes			85.6	2.89 (S)		
Fluorene	86-73-7		4.99	1.92 (S)	0.82	0.844
Phenanthrene	85-01-8		35.6	1.23 (S)	0.20	1.004
Anthracene	120-12-7		2.50	1.21 (S)	0.15	1.011
C1 Phenanthrenes/Anthracenes			8.21	3.36 (S)		
Fluoranthene	206-44-0		14.5	0.887 (S)	0.23	1.205
Pyrene	129-00-0	NDR	8.28	0.864 (S)	2.55	1.241
Benz[a]anthracene [3]	56-55-3	ND		0.693 (S)		
Chrysene [4]	218-01-9		1.91	0.739 (S)	0.32	1.003
Benzo[b]fluoranthene	205-99-2	ND		1.29 (S)		
Benzo[j,k]fluoranthenes		ND		1.38 (S)		
Benzo[e]pyrene	192-97-2	ND		1.90 (S)		
Benzo[a]pyrene	50-32-8	ND		1.78 (S)		
Perylene	198-55-0	ND		1.91 (S)		
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.44 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		2.69 (S)		
Benzo[ghi]perylene	191-24-2	ND		2.59 (S)		
2-Methylnaphthalene	91-57-6		29.5	1.49 (S)	0.89	1.009
1-Methylnaphthalene	90-12-0		17.0	1.64 (S)	1.01	1.040
C1-Naphthalenes			46.5	1.49 (S)		
Biphenyl	92-52-4		14.2	3.81 (S)	0.31	1.006
C1-Biphenyls			19.8	2.99 (S)		
C2-Biphenyls			23.9	2.77 (S)		
C2-Naphthalenes			76.0	4.38 (S)		
1,2-Dimethylnaphthalene	573-98-8	NDR	5.22	4.38 (S)	0.74	1.081

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		12.6	3.33 (S)	0.63	1.011
C3-Naphthalenes			37.5	1.09 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		9.32	1.11 (S)	0.92	1.204
2,3,5-Trimethylnaphthalene	2245-38-7		7.64	1.08 (S)	0.95	1.225
C4-Naphthalenes			13.2	2.68 (S)		
C1-Acenaphthenes		ND		1.76 (S)		
C1-Fluorenes			9.32	1.79 (S)		
1,7-Dimethylfluorene	442-66-0	ND		2.41 (S)		
C2-Fluorenes			19.1	2.41 (S)		
C3-Fluorenes			246	1.38 (S)		
Dibenzothiophene	132-65-0		2.21	0.479 (S)	0.08	1.003
C1-Dibenzothiophenes			1.12	1.04 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	ND		1.04 (S)		
C2-Dibenzothiophenes			25.0	1.57 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	ND		1.57 (S)		
4,6-Dimethyldibenzothiophene	1207-12-1	NDR	1.55	1.26 (S)	0.66	1.153
C3-Dibenzothiophenes			39.5	1.68 (S)		
C4-Dibenzothiophenes			12.0	2.19 (S)		
3-Methylphenanthrene	832-71-3	ND		3.43 (S)		
2-Methylphenanthrene	2531-84-2		4.76	3.33 (S)	0.61	1.093
2-Methylanthracene	613-12-7	ND		3.63 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4	ND		3.43 (S)		
1-Methylphenanthrene	832-69-9		3.45	3.36 (S)	0.60	1.110
3,6-Dimethylphenanthrene	1576-67-6	ND		2.81 (S)		
2,6-Dimethylphenanthrene	17980-16-4	ND		2.89 (S)		
1,7-Dimethylphenanthrene	483-87-4	ND		2.99 (S)		
1,8-Dimethylphenanthrene	7372-87-4	ND		2.89 (S)		
C3-Phenanthrenes/Anthracenes			908	3.31 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6	ND		3.31 (S)		
Retene	483-65-8		7.74	2.42 (S)	1.43	1.302
C4-Phenanthrenes/Anthracenes			42.4	2.42 (S)		
C1-Fluoranthenes/Pyrenes			1.71	1.25 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		1.31	1.25 (S)	0.92	1.302
C2-Fluoranthenes/Pyrenes		ND		2.19 (S)		
C3-Fluoranthenes/Pyrenes		ND		0.945 (S)		
C4-Fluoranthenes/Pyrenes		ND		1.13 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			1.47	1.39 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7	ND		1.46 (S)		
1-Methylchrysene	3351-28-8	ND		1.32 (S)		
C2-Benzo[a]anthracenes/Chrysenes [4]		ND		1.15 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		1.15 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.42 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			9.12	2.61 (S)		
C1-Benzofluoranthenes/Benzopyrenes			11.3	3.20 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		3.20 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.67 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	ND		2.68 (S)		
Anthracene d-10			20700	3.99 (S)	0.15	1.009
Fluoranthene d-10	93951-69-0		29600	1.11 (S)	0.17	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2820	3.01 (S)	0.27	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-1_Form1A_PH5H0782.D_SJ3566462.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
Day Zero-1
Sample Collection:
N/A

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-1
Sample Receipt Date:	30-Apr-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 20:44:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0782.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1480	37.0	0.09	0.610
2-Methylnaphthalene d-10		4040	1850	45.9	0.19	0.756
Biphenyl d-10		4010	2060	51.3		0.868
2,6-Dimethylnaphthalene d-12		4020	2100	52.3	0.68	0.896
Acenaphthylene d-8		4020	2120	52.8	0.17	0.961
Dibenzothiophene d-8		4010	2320	57.8	0.08	0.792
Phenanthrene d-10		4010	2790	69.6	0.14	0.808
Benzo[a]anthracene d-12		4000	3370	84.2	0.22	1.165
Chrysene d-12		3220	2760	85.8	0.25	1.170
Benzo[b]fluoranthene d-12		3990	3420	85.6	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3350	85.8	0.18	0.961
Benzo[a]pyrene d-12		4010	3280	81.9	0.18	1.009
Perylene d-12		4000	3360	83.9	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3100	78.1	0.17	1.206
Benzo[ghi]perylene d-12		3980	3320	83.4	0.19	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-1_Form2_PH5H0782.D_SJ3566462.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Trip Blank 19-JUN-24
Sample Collection:
19-Jun-2024

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-4
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 21:33:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0783.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		58.7	2.94 (S)	0.07	1.007
Acenaphthylene	208-96-8	ND		1.29 (S)		
Acenaphthene	83-32-9		15.7	1.11 (S)	1.20	1.048
2-Methylfluorene	1430-97-3	ND		3.79 (S)		
C2 Phenanthrenes/Anthracenes			91.6	3.37 (S)		
Fluorene	86-73-7		9.38	2.09 (S)	1.03	0.844
Phenanthrene	85-01-8		54.7	1.87 (S)	0.20	1.004
Anthracene	120-12-7		2.24	1.85 (S)	0.16	1.011
C1 Phenanthrenes/Anthracenes			9.80	4.00 (S)		
Fluoranthene	206-44-0		15.8	1.10 (S)	0.23	1.204
Pyrene	129-00-0	NDR	9.19	1.07 (S)	6.84	1.240
Benz[a]anthracene [3]	56-55-3	ND		0.825 (S)		
Chrysene [4]	218-01-9		1.98	0.854 (S)	0.32	1.003
Benzo[b]fluoranthene	205-99-2	ND		1.71 (S)		
Benzo[j,k]fluoranthenes		ND		1.82 (S)		
Benzo[e]pyrene	192-97-2	ND		2.50 (S)		
Benzo[a]pyrene	50-32-8	ND		2.34 (S)		
Perylene	198-55-0	ND		2.55 (S)		
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.26 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		0.777 (S)		
Benzo[ghi]perylene	191-24-2	ND		0.799 (S)		
2-Methylnaphthalene	91-57-6		39.2	0.952 (S)	0.86	1.009
1-Methylnaphthalene	90-12-0		22.8	1.05 (S)	0.98	1.040
C1-Naphthalenes			61.9	0.952 (S)		
Biphenyl	92-52-4		20.1	2.23 (S)	0.30	1.005
C1-Biphenyls			25.7	2.58 (S)		
C2-Biphenyls			24.9	3.08 (S)		
C2-Naphthalenes			89.4	3.89 (S)		
1,2-Dimethylnaphthalene	573-98-8	ND		3.89 (S)		

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		18.5	2.96 (S)	0.66	1.011
C3-Naphthalenes			51.9	1.70 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		11.8	1.73 (S)	0.97	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		9.98	1.67 (S)	1.03	1.227
C4-Naphthalenes			15.4	0.902 (S)		
C1-Acenaphthenes		ND		1.11 (S)		
C1-Fluorenes			8.51	3.79 (S)		
1,7-Dimethylfluorene	442-66-0	ND		3.63 (S)		
C2-Fluorenes			13.8	3.63 (S)		
C3-Fluorenes			333	2.97 (S)		
Dibenzothiophene	132-65-0		3.55	0.885 (S)	0.09	1.003
C1-Dibenzothiophenes		ND		2.07 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	ND		2.07 (S)		
C2-Dibenzothiophenes			23.0	1.09 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	ND		1.09 (S)		
4,6-Dimethyldibenzothiophene	1207-12-1	NDR	0.917	0.872 (S)	1.46	1.153
C3-Dibenzothiophenes			66.6	2.06 (S)		
C4-Dibenzothiophenes			15.9	1.26 (S)		
3-Methylphenanthrene	832-71-3		4.88	4.08 (S)	0.62	1.088
2-Methylphenanthrene	2531-84-2		4.92	3.95 (S)	0.53	1.092
2-Methylanthracene	613-12-7	ND		4.31 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4	ND		4.08 (S)		
1-Methylphenanthrene	832-69-9	ND		4.00 (S)		
3,6-Dimethylphenanthrene	1576-67-6	ND		3.27 (S)		
2,6-Dimethylphenanthrene	17980-16-4	ND		3.37 (S)		
1,7-Dimethylphenanthrene	483-87-4	ND		3.48 (S)		
1,8-Dimethylphenanthrene	7372-87-4	ND		3.37 (S)		
C3-Phenanthrenes/Anthracenes			2030	0.833 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6	ND		0.833 (S)		
Retene	483-65-8		6.10	3.15 (S)	1.42	1.303
C4-Phenanthrenes/Anthracenes			61.9	3.15 (S)		
C1-Fluoranthenes/Pyrenes			3.10	2.02 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	ND		2.02 (S)		
C2-Fluoranthenes/Pyrenes		ND		2.63 (S)		
C3-Fluoranthenes/Pyrenes		ND		0.910 (S)		
C4-Fluoranthenes/Pyrenes			2.04	0.977 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			2.12	1.37 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7	ND		1.44 (S)		
1-Methylchrysene	3351-28-8	ND		1.30 (S)		
C2-Benzo[a]anthracenes/Chrysenes [4]		ND		1.83 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		1.83 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.62 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			11.9	2.38 (S)		
C1-Benzofluoranthenes/Benzopyrenes			14.8	2.73 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.73 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.91 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	NDR	1.79	0.902 (S)	0.08	1.377
Anthracene d-10			21200	4.83 (S)	0.15	1.009
Fluoranthene d-10	93951-69-0		29700	1.38 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2900	2.00 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-4_Form1A_PH5H0783.D_SJ3566463.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Trip Blank 19-JUN-24
Sample Collection:
19-Jun-2024

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-4
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 21:33:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0783.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1820	45.3	0.10	0.609
2-Methylnaphthalene d-10		4040	2170	53.7	0.19	0.756
Biphenyl d-10		4010	2310	57.6		0.868
2,6-Dimethylnaphthalene d-12		4020	2340	58.1	0.68	0.896
Acenaphthylene d-8		4020	2380	59.1	0.17	0.961
Dibenzothiophene d-8		4010	2130	53.1	0.08	0.792
Phenanthrene d-10		4010	2810	70.1	0.14	0.808
Benzo[a]anthracene d-12		4000	3320	82.9	0.22	1.165
Chrysene d-12		3220	2700	84.1	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3240	81.1	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3180	81.3	0.18	0.961
Benzo[a]pyrene d-12		4010	3180	79.2	0.18	1.008
Perylene d-12		4000	3210	80.3	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3040	76.6	0.17	1.206
Benzo[ghi]perylene d-12		3980	3170	79.6	0.19	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-4_Form2_PH5H0783.D_SJ3566463.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Field Blank 19-JUN-24
Sample Collection:
19-Jun-2024

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-6
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 22:23:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0784.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		66.9	2.47 (S)	0.06	1.006
Acenaphthylene	208-96-8	ND		1.02 (S)		
Acenaphthene	83-32-9		14.2	2.43 (S)	1.18	1.047
2-Methylfluorene	1430-97-3	ND		1.52 (S)		
C2 Phenanthrenes/Anthracenes			68.7	3.35 (S)		
Fluorene	86-73-7		8.42	2.02 (S)	0.90	0.844
Phenanthrene	85-01-8		46.8	1.02 (S)	0.19	1.004
Anthracene	120-12-7		2.13	1.01 (S)	0.16	1.011
C1 Phenanthrenes/Anthracenes			14.0	0.866 (S)		
Fluoranthene	206-44-0		11.7	1.06 (S)	0.19	1.204
Pyrene	129-00-0	NDR	9.06	1.03 (S)	9.48	1.240
Benz[a]anthracene [3]	56-55-3	ND		0.877 (S)		
Chrysene [4]	218-01-9		1.77	0.990 (S)	0.25	1.002
Benzo[b]fluoranthene	205-99-2	ND		1.51 (S)		
Benzo[j,k]fluoranthenes		ND		1.58 (S)		
Benzo[e]pyrene	192-97-2	ND		2.30 (S)		
Benzo[a]pyrene	50-32-8	ND		2.16 (S)		
Perylene	198-55-0	ND		2.24 (S)		
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.810 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	0.494	0.389 (S)	1.21	1.003
Benzo[ghi]perylene	191-24-2	ND		0.384 (S)		
2-Methylnaphthalene	91-57-6		36.6	1.06 (S)	0.90	1.009
1-Methylnaphthalene	90-12-0		21.5	1.17 (S)	1.04	1.040
C1-Naphthalenes			58.1	1.06 (S)		
Biphenyl	92-52-4		16.5	3.16 (S)	0.28	1.005
C1-Biphenyls			19.9	2.00 (S)		
C2-Biphenyls			18.3	1.86 (S)		
C2-Naphthalenes			73.9	4.57 (S)		
1,2-Dimethylnaphthalene	573-98-8	ND		4.57 (S)		

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		14.8	3.47 (S)	0.63	1.011
C3-Naphthalenes			41.7	0.916 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		11.8	0.932 (S)	0.98	1.204
2,3,5-Trimethylnaphthalene	2245-38-7		8.65	0.900 (S)	0.97	1.225
C4-Naphthalenes			12.0	3.03 (S)		
C1-Acenaphthenes		ND		0.888 (S)		
C1-Fluorenes			7.82	1.52 (S)		
1,7-Dimethylfluorene	442-66-0	ND		2.29 (S)		
C2-Fluorenes			20.8	2.29 (S)		
C3-Fluorenes			144	1.60 (S)		
Dibenzothiophene	132-65-0	NDR	2.03	1.46 (S)	0.19	1.003
C1-Dibenzothiophenes		ND		2.05 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	ND		2.05 (S)		
C2-Dibenzothiophenes			18.7	0.913 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	ND		0.913 (S)		
4,6-Dimethyldibenzothiophene	1207-12-1	NDR	0.889	0.732 (S)	1.23	1.153
C3-Dibenzothiophenes			67.3	1.73 (S)		
C4-Dibenzothiophenes			10.6	0.721 (S)		
3-Methylphenanthrene	832-71-3		3.78	0.884 (S)	0.69	1.087
2-Methylphenanthrene	2531-84-2		4.35	0.856 (S)	0.59	1.091
2-Methylanthracene	613-12-7	NDR	1.45	0.934 (S)	1.29	1.098
9/4-Methylphenanthrene	883-20-5/832-64-4		2.69	0.884 (S)	0.51	1.106
1-Methylphenanthrene	832-69-9		3.16	0.866 (S)	0.55	1.109
3,6-Dimethylphenanthrene	1576-67-6	ND		3.25 (S)		
2,6-Dimethylphenanthrene	17980-16-4	ND		3.35 (S)		
1,7-Dimethylphenanthrene	483-87-4	ND		3.45 (S)		
1,8-Dimethylphenanthrene	7372-87-4	ND		3.35 (S)		
C3-Phenanthrenes/Anthracenes			2560	3.66 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6	ND		3.66 (S)		
Retene	483-65-8		5.39	2.90 (S)	1.44	1.302
C4-Phenanthrenes/Anthracenes			64.6	2.90 (S)		
C1-Fluoranthenes/Pyrenes			1.85	1.63 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	ND		1.63 (S)		
C2-Fluoranthenes/Pyrenes		ND		2.29 (S)		
C3-Fluoranthenes/Pyrenes		ND		1.30 (S)		
C4-Fluoranthenes/Pyrenes			2.03	0.844 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			1.04	0.990 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7	ND		1.04 (S)		
1-Methylchrysene	3351-28-8	ND		0.943 (S)		
C2-Benzo[a]anthracenes/Chrysenes [4]		ND		1.35 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		1.35 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.35 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			5.26	2.55 (S)		
C1-Benzofluoranthenes/Benzopyrenes			16.2	2.48 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.48 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.95 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	ND		3.03 (S)		
Anthracene d-10			21500	0.841 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		30400	1.94 (S)	0.17	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2880	2.61 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Field Blank 19-JUN-24
Sample Collection:
19-Jun-2024

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-6
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 22:23:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0784.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1790	44.7	0.09	0.609
2-Methylnaphthalene d-10		4040	2170	53.7	0.19	0.756
Biphenyl d-10		4010	2390	59.6		0.868
2,6-Dimethylnaphthalene d-12		4020	2440	60.7	0.68	0.896
Acenaphthylene d-8		4020	2540	63.2	0.17	0.961
Dibenzothiophene d-8		4010	2510	62.7	0.08	0.792
Phenanthrene d-10		4010	3080	76.8	0.14	0.808
Benzo[a]anthracene d-12		4000	3510	87.7	0.22	1.164
Chrysene d-12		3220	2860	89.0	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3530	88.5	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3350	85.6	0.18	0.961
Benzo[a]pyrene d-12		4010	3420	85.3	0.18	1.008
Perylene d-12		4000	3450	86.1	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3340	84.2	0.17	1.206
Benzo[ghi]perylene d-12		3980	3420	85.9	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-6_Form2_PH5H0784.D_SJ3566464.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-01 19-JUL-24
Sample Collection:
19-Jul-2024 15:20

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-8
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 23:33:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0786.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		85.3	3.22 (S)	0.07	1.006
Acenaphthylene	208-96-8		3.08	3.06 (S)	0.18	1.003
Acenaphthene	83-32-9		62.8	2.23 (S)	1.17	1.047
2-Methylfluorene	1430-97-3		17.2	1.55 (S)	1.31	0.938
C2 Phenanthrenes/Anthracenes			381	0.776 (S)		
Fluorene	86-73-7		42.1	2.14 (S)	1.01	0.843
Phenanthrene	85-01-8		240	3.58 (S)	0.19	1.003
Anthracene	120-12-7		5.86	3.53 (S)	0.21	1.011
C1 Phenanthrenes/Anthracenes			334	1.09 (S)		
Fluoranthene	206-44-0		99.5	1.57 (S)	0.21	1.204
Pyrene	129-00-0		104	1.52 (S)	0.23	1.240
Benz[a]anthracene [3]	56-55-3		4.19	2.80 (S)	0.27	1.002
Chrysene [4]	218-01-9		49.7	3.09 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		6.64	2.87 (S)	0.26	1.004
Benzo[j,k]fluoranthenes		ND		2.97 (S)		
Benzo[e]pyrene	192-97-2	NDR	15.9	4.06 (S)	0.56	0.996
Benzo[a]pyrene	50-32-8	ND		3.81 (S)		
Perylene	198-55-0		64.5	4.16 (S)	0.18	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.19 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.23 (S)		
Benzo[ghi]perylene	191-24-2	NDR	5.31	1.25 (S)	0.61	1.002
2-Methylnaphthalene	91-57-6		45.7	2.13 (S)	0.95	1.009
1-Methylnaphthalene	90-12-0		36.2	2.35 (S)	0.94	1.040
C1-Naphthalenes			81.9	2.13 (S)		
Biphenyl	92-52-4		16.5	1.86 (S)	0.30	1.005
C1-Biphenyls			17.8	1.61 (S)		
C2-Biphenyls			41.0	2.90 (S)		
C2-Naphthalenes			204	2.42 (S)		
1,2-Dimethylnaphthalene	573-98-8		14.8	2.42 (S)	1.12	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		32.3	1.84 (S)	0.68	1.011
C3-Naphthalenes			377	2.09 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		95.6	2.13 (S)	0.87	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		71.5	2.05 (S)	0.92	1.225
C4-Naphthalenes			342	2.21 (S)		
C1-Acenaphthenes			1.97	1.31 (S)		
C1-Fluorenes			60.1	1.55 (S)		
1,7-Dimethylfluorene	442-66-0		7.02	3.78 (S)	0.08	1.033
C2-Fluorenes			158	3.78 (S)		
C3-Fluorenes			297	2.26 (S)		
Dibenzothiophene	132-65-0		17.7	0.748 (S)	0.07	1.003
C1-Dibenzothiophenes			53.8	1.50 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		24.3	1.50 (S)	0.72	1.098
C2-Dibenzothiophenes			142	2.59 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		12.7	2.59 (S)	0.48	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		21.5	2.08 (S)	0.13	1.153
C3-Dibenzothiophenes			96.2	3.86 (S)		
C4-Dibenzothiophenes			17.0	2.52 (S)		
3-Methylphenanthrene	832-71-3		59.4	1.12 (S)	0.65	1.087
2-Methylphenanthrene	2531-84-2		69.7	1.08 (S)	0.58	1.091
2-Methylanthracene	613-12-7	NDR	3.45	1.18 (S)	1.09	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		115	1.12 (S)	0.60	1.106
1-Methylphenanthrene	832-69-9		89.2	1.09 (S)	0.63	1.109
3,6-Dimethylphenanthrene	1576-67-6	NDR	26.0	0.754 (S)	0.93	1.164
2,6-Dimethylphenanthrene	17980-16-4		17.6	0.776 (S)	0.43	1.170
1,7-Dimethylphenanthrene	483-87-4		65.7	0.802 (S)	0.33	1.192
1,8-Dimethylphenanthrene	7372-87-4		19.4	0.776 (S)	0.43	1.209
C3-Phenanthrenes/Anthracenes			610	2.75 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		11.2	2.75 (S)	0.52	1.292
Retene	483-65-8		388	2.80 (S)	1.52	1.301
C4-Phenanthrenes/Anthracenes			629	2.80 (S)		
C1-Fluoranthenes/Pyrenes			150	1.97 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		51.6	1.97 (S)	1.10	1.301
C2-Fluoranthenes/Pyrenes			100	1.97 (S)		
C3-Fluoranthenes/Pyrenes			45.5	2.27 (S)		
C4-Fluoranthenes/Pyrenes			22.8	1.40 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			33.6	1.88 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		4.11	1.97 (S)		1.066
1-Methylchrysene	3351-28-8		5.97	1.79 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			27.8	2.64 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		2.64 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		2.26 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			5.73	3.64 (S)		
C1-Benzofluoranthenes/Benzopyrenes			25.6	4.35 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		4.35 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		4.35 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		46.0	2.21 (S)	0.02	1.377
Anthracene d-10			1850	1.88 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		13000	2.99 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2720	2.79 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-8_Form1A_PH5H0786.D_SJ3566465.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-US-01 19-JUL-24
Sample Collection:
19-Jul-2024 15:20

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-8
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 23:33:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0786.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1460	36.4	0.09	0.609
2-Methylnaphthalene d-10		4040	1790	44.2	0.19	0.756
Biphenyl d-10		4010	1890	47.1		0.868
2,6-Dimethylnaphthalene d-12		4020	1930	48.0	0.68	0.896
Acenaphthylene d-8		4020	1970	48.9	0.17	0.961
Dibenzothiophene d-8		4010	1690	42.1	0.08	0.792
Phenanthrene d-10		4010	2190	54.6	0.14	0.808
Benzo[a]anthracene d-12		4000	2780	69.6	0.22	1.165
Chrysene d-12		3220	2240	69.7	0.25	1.169
Benzo[b]fluoranthene d-12		3990	2800	70.2	0.19	0.957
Benzo[k]fluoranthene d-12		3910	2690	68.8	0.18	0.961
Benzo[a]pyrene d-12		4010	2710	67.7	0.18	1.009
Perylene d-12		4000	2720	67.9	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	2640	66.4	0.17	1.206
Benzo[ghi]perylene d-12		3980	2730	68.6	0.19	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-8_Form2_PH5H0786.D_SJ3566465.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-02 19-JUL-24
Sample Collection:
19-Jul-2024 14:02

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-9
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 00:22:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0787.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		57.5	1.00 (S)	0.07	1.006
Acenaphthylene	208-96-8		2.39	1.27 (S)	0.17	1.003
Acenaphthene	83-32-9		38.6	2.37 (S)	1.18	1.047
2-Methylfluorene	1430-97-3		16.6	2.50 (S)	1.27	0.939
C2 Phenanthrenes/Anthracenes			383	1.38 (S)		
Fluorene	86-73-7		28.3	1.42 (S)	1.02	0.843
Phenanthrene	85-01-8		192	2.53 (S)	0.19	1.003
Anthracene	120-12-7		3.97	2.50 (S)	0.21	1.011
C1 Phenanthrenes/Anthracenes			336	0.523 (S)		
Fluoranthene	206-44-0		81.6	2.93 (S)	0.21	1.204
Pyrene	129-00-0	NDR	107	2.86 (S)	0.59	1.240
Benz[a]anthracene [3]	56-55-3		4.76	1.97 (S)	0.23	1.002
Chrysene [4]	218-01-9		52.5	2.15 (S)	0.33	1.002
Benzo[b]fluoranthene	205-99-2		10.2	1.28 (S)	0.20	1.004
Benzo[j,k]fluoranthenes		ND		1.32 (S)		
Benzo[e]pyrene	192-97-2	NDR	20.8	1.86 (S)	1.20	0.996
Benzo[a]pyrene	50-32-8	ND		1.74 (S)		
Perylene	198-55-0		63.2	1.88 (S)	0.24	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.789 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		0.732 (S)		
Benzo[ghi]perylene	191-24-2		6.45	0.750 (S)	0.21	1.002
2-Methylnaphthalene	91-57-6		31.6	1.28 (S)	0.92	1.009
1-Methylnaphthalene	90-12-0		25.7	1.42 (S)	0.97	1.040
C1-Naphthalenes			57.3	1.28 (S)		
Biphenyl	92-52-4		12.3	1.90 (S)	0.28	1.005
C1-Biphenyls			16.0	1.60 (S)		
C2-Biphenyls			37.9	2.53 (S)		
C2-Naphthalenes			178	4.54 (S)		
1,2-Dimethylnaphthalene	573-98-8		10.7	4.54 (S)	1.03	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		29.3	3.45 (S)	0.72	1.011
C3-Naphthalenes			400	2.57 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		101	2.61 (S)	0.91	1.204
2,3,5-Trimethylnaphthalene	2245-38-7		72.9	2.52 (S)	0.95	1.225
C4-Naphthalenes			398	1.77 (S)		
C1-Acenaphthenes		ND		2.03 (S)		
C1-Fluorenes			55.2	2.50 (S)		
1,7-Dimethylfluorene	442-66-0	ND		3.97 (S)		
C2-Fluorenes			144	3.97 (S)		
C3-Fluorenes			330	4.06 (S)		
Dibenzothiophene	132-65-0		14.7	1.82 (S)	0.07	1.003
C1-Dibenzothiophenes			64.3	0.511 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		24.3	0.511 (S)	0.72	1.098
C2-Dibenzothiophenes			123	3.91 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		11.7	3.91 (S)	0.53	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		18.3	3.14 (S)	0.13	1.153
C3-Dibenzothiophenes			117	1.08 (S)		
C4-Dibenzothiophenes			25.9	2.29 (S)		
3-Methylphenanthrene	832-71-3		58.2	0.534 (S)	0.66	1.087
2-Methylphenanthrene	2531-84-2		69.5	0.517 (S)	0.58	1.091
2-Methylanthracene	613-12-7	NDR	2.58	0.564 (S)	1.48	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		126	0.534 (S)	0.59	1.106
1-Methylphenanthrene	832-69-9		82.7	0.523 (S)	0.65	1.109
3,6-Dimethylphenanthrene	1576-67-6	NDR	25.5	1.34 (S)	1.01	1.164
2,6-Dimethylphenanthrene	17980-16-4		16.9	1.38 (S)	0.42	1.171
1,7-Dimethylphenanthrene	483-87-4		68.8	1.43 (S)	0.33	1.193
1,8-Dimethylphenanthrene	7372-87-4		20.2	1.38 (S)	0.38	1.209
C3-Phenanthrenes/Anthracenes			2470	3.34 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		10.2	3.34 (S)	0.57	1.293
Retene	483-65-8		386	2.08 (S)	1.52	1.301
C4-Phenanthrenes/Anthracenes			623	2.08 (S)		
C1-Fluoranthenes/Pyrenes			145	1.42 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		52.6	1.42 (S)	1.11	1.301
C2-Fluoranthenes/Pyrenes			96.8	1.01 (S)		
C3-Fluoranthenes/Pyrenes			39.7	0.980 (S)		
C4-Fluoranthenes/Pyrenes			17.0	3.06 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			34.5	1.19 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		3.47	1.25 (S)		1.066
1-Methylchrysene	3351-28-8		6.17	1.13 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			15.6	3.29 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		3.29 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		2.03 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			9.57	1.68 (S)		
C1-Benzofluoranthenes/Benzopyrenes			21.2	2.14 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.14 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.48 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		49.7	1.77 (S)	0.02	1.377
Anthracene d-10			1410	1.39 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		12000	2.32 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2750	1.76 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-9_Form1A_PH5H0787.D_SJ3566466.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-02 19-JUL-24
Sample Collection:
19-Jul-2024 14:02

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-9
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 00:22:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0787.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1860	46.3	0.10	0.609
2-Methylnaphthalene d-10		4040	2280	56.3	0.19	0.756
Biphenyl d-10		4010	2450	61.0		0.868
2,6-Dimethylnaphthalene d-12		4020	2480	61.7	0.68	0.896
Acenaphthylene d-8		4020	2590	64.5	0.17	0.961
Dibenzothiophene d-8		4010	2610	65.2	0.08	0.792
Phenanthrene d-10		4010	3090	77.0	0.14	0.808
Benzo[a]anthracene d-12		4000	3670	91.8	0.22	1.165
Chrysene d-12		3220	2960	92.1	0.25	1.170
Benzo[b]fluoranthene d-12		3990	3600	90.3	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3480	89.1	0.18	0.961
Benzo[a]pyrene d-12		4010	3500	87.2	0.18	1.008
Perylene d-12		4000	3530	88.3	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3440	86.7	0.17	1.206
Benzo[ghi]perylene d-12		3980	3500	87.9	0.19	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-9_Form2_PH5H0787.D_SJ3566466.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-03 19-JUL-24
Sample Collection:
19-Jul-2024 13:26

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-10
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 01:12:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0788.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		70.8	2.73 (S)	0.06	1.006
Acenaphthylene	208-96-8	ND		2.80 (S)		
Acenaphthene	83-32-9		48.8	1.30 (S)	1.17	1.047
2-Methylfluorene	1430-97-3		16.0	1.37 (S)	1.34	0.939
C2 Phenanthrenes/Anthracenes			398	1.76 (S)		
Fluorene	86-73-7		29.5	0.699 (S)	1.05	0.843
Phenanthrene	85-01-8		208	3.19 (S)	0.18	1.003
Anthracene	120-12-7		5.29	3.15 (S)	0.20	1.011
C1 Phenanthrenes/Anthracenes			337	0.996 (S)		
Fluoranthene	206-44-0		86.4	1.81 (S)	0.21	1.204
Pyrene	129-00-0	NDR	109	1.76 (S)	0.54	1.240
Benz[a]anthracene [3]	56-55-3		4.19	1.88 (S)	0.27	1.002
Chrysene [4]	218-01-9		49.0	2.09 (S)	0.34	1.002
Benzo[b]fluoranthene	205-99-2		7.96	1.29 (S)	0.18	1.004
Benzo[j,k]fluoranthenes		ND		1.33 (S)		
Benzo[e]pyrene	192-97-2	NDR	18.1	1.80 (S)	1.58	0.996
Benzo[a]pyrene	50-32-8	ND		1.68 (S)		
Perylene	198-55-0		56.5	1.92 (S)	0.26	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.465 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		0.767 (S)		
Benzo[ghi]perylene	191-24-2		6.30	0.759 (S)	0.20	1.003
2-Methylnaphthalene	91-57-6		35.4	1.23 (S)	0.94	1.009
1-Methylnaphthalene	90-12-0		29.4	1.36 (S)	0.96	1.040
C1-Naphthalenes			64.8	1.23 (S)		
Biphenyl	92-52-4		13.5	3.69 (S)	0.29	1.005
C1-Biphenyls			18.0	1.38 (S)		
C2-Biphenyls			42.8	3.53 (S)		
C2-Naphthalenes			196	3.17 (S)		
1,2-Dimethylnaphthalene	573-98-8		13.8	3.17 (S)	1.09	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		26.5	2.41 (S)	0.78	1.011
C3-Naphthalenes			428	1.49 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		107	1.51 (S)	0.88	1.204
2,3,5-Trimethylnaphthalene	2245-38-7		79.0	1.46 (S)	0.91	1.226
C4-Naphthalenes			420	1.48 (S)		
C1-Acenaphthenes		ND		1.80 (S)		
C1-Fluorenes			49.4	1.37 (S)		
1,7-Dimethylfluorene	442-66-0	NDR	5.85	2.85 (S)	0.04	1.033
C2-Fluorenes			151	2.85 (S)		
C3-Fluorenes			176	4.21 (S)		
Dibenzothiophene	132-65-0		16.4	2.43 (S)	0.09	1.003
C1-Dibenzothiophenes			71.4	1.20 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		26.2	1.20 (S)	0.81	1.097
C2-Dibenzothiophenes			156	1.00 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		12.8	1.00 (S)	0.40	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		20.6	0.804 (S)	0.16	1.153
C3-Dibenzothiophenes			111	3.87 (S)		
C4-Dibenzothiophenes			30.2	3.33 (S)		
3-Methylphenanthrene	832-71-3		60.8	1.02 (S)	0.62	1.087
2-Methylphenanthrene	2531-84-2		66.8	0.984 (S)	0.59	1.091
2-Methylanthracene	613-12-7	NDR	5.47	1.07 (S)	1.68	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		125	1.02 (S)	0.57	1.106
1-Methylphenanthrene	832-69-9		84.2	0.996 (S)	0.69	1.109
3,6-Dimethylphenanthrene	1576-67-6	NDR	24.0	1.70 (S)	0.96	1.164
2,6-Dimethylphenanthrene	17980-16-4		14.6	1.76 (S)	0.33	1.170
1,7-Dimethylphenanthrene	483-87-4		65.3	1.81 (S)	0.33	1.193
1,8-Dimethylphenanthrene	7372-87-4		20.9	1.76 (S)	0.41	1.209
C3-Phenanthrenes/Anthracenes			2030	2.75 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		11.5	2.75 (S)	0.46	1.293
Retene	483-65-8		369	3.57 (S)	1.52	1.301
C4-Phenanthrenes/Anthracenes			599	3.57 (S)		
C1-Fluoranthenes/Pyrenes			142	0.835 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		49.1	0.835 (S)	1.09	1.301
C2-Fluoranthenes/Pyrenes			94.5	1.73 (S)		
C3-Fluoranthenes/Pyrenes			48.4	0.925 (S)		
C4-Fluoranthenes/Pyrenes			14.2	0.716 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			34.2	0.571 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		3.33	0.600 (S)		1.065
1-Methylchrysene	3351-28-8		5.60	0.544 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			17.6	1.49 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		1.49 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		2.14 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			9.36	2.67 (S)		
C1-Benzofluoranthenes/Benzopyrenes			16.9	2.81 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.81 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.98 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		50.7	1.48 (S)	0.02	1.377
Anthracene d-10			1620	1.35 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		12200	2.37 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2790	3.23 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-10_Form1A_PH5H0788.D_SJ3566467.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-03 19-JUL-24
Sample Collection:
19-Jul-2024 13:26

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-10
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 01:12:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0788.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1660	41.4	0.09	0.609
2-Methylnaphthalene d-10		4040	2060	50.9	0.19	0.756
Biphenyl d-10		4010	2230	55.7		0.868
2,6-Dimethylnaphthalene d-12		4020	2290	57.1	0.68	0.896
Acenaphthylene d-8		4020	2420	60.1	0.17	0.961
Dibenzothiophene d-8		4010	2340	58.5	0.08	0.792
Phenanthrene d-10		4010	2870	71.5	0.14	0.808
Benzo[a]anthracene d-12		4000	3580	89.6	0.22	1.165
Chrysene d-12		3220	2890	89.9	0.26	1.170
Benzo[b]fluoranthene d-12		3990	3490	87.5	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3350	85.8	0.18	0.961
Benzo[a]pyrene d-12		4010	3390	84.5	0.19	1.008
Perylene d-12		4000	3410	85.2	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3320	83.7	0.17	1.206
Benzo[ghi]perylene d-12		3980	3420	85.9	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-10_Form2_PH5H0788.D_SJ3566467.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-US-04 18-JUL-24
Sample Collection:
18-Jul-2024 15:20

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-11
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 02:01:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0789.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		67.2	3.16 (S)	0.06	1.006
Acenaphthylene	208-96-8	ND		2.08 (S)		
Acenaphthene	83-32-9		44.6	1.74 (S)	1.25	1.047
2-Methylfluorene	1430-97-3		27.1	2.27 (S)	1.37	0.939
C2 Phenanthrenes/Anthracenes			1420	1.27 (S)		
Fluorene	86-73-7		30.1	0.568 (S)	1.02	0.844
Phenanthrene	85-01-8		279	2.95 (S)	0.19	1.004
Anthracene	120-12-7	ND		2.91 (S)		
C1 Phenanthrenes/Anthracenes			609	1.45 (S)		
Fluoranthene	206-44-0		69.4	1.88 (S)	0.20	1.204
Pyrene	129-00-0	NDR	72.9	1.83 (S)	0.69	1.240
Benz[a]anthracene [3]	56-55-3		7.75	2.43 (S)	0.26	1.002
Chrysene [4]	218-01-9		120	2.51 (S)	0.29	1.002
Benzo[b]fluoranthene	205-99-2		8.28	1.74 (S)	0.24	1.004
Benzo[j,k]fluoranthenes		ND		1.81 (S)		
Benzo[e]pyrene	192-97-2		20.6	2.51 (S)	0.19	0.996
Benzo[a]pyrene	50-32-8	ND		2.35 (S)		
Perylene	198-55-0	NDR	5.36	2.59 (S)	0.13	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.949 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.49 (S)		
Benzo[ghi]perylene	191-24-2	NDR	3.86	1.53 (S)	0.61	1.002
2-Methylnaphthalene	91-57-6		36.8	2.23 (S)	0.94	1.009
1-Methylnaphthalene	90-12-0		29.3	2.46 (S)	0.92	1.040
C1-Naphthalenes			66.1	2.23 (S)		
Biphenyl	92-52-4		15.4	3.48 (S)	0.32	1.005
C1-Biphenyls			12.4	1.49 (S)		
C2-Biphenyls			40.5	2.40 (S)		
C2-Naphthalenes			225	5.12 (S)		
1,2-Dimethylnaphthalene	573-98-8		17.4	5.12 (S)	1.11	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		31.9	3.89 (S)	0.75	1.011
C3-Naphthalenes			781	0.488 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		229	0.497 (S)	0.85	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		138	0.479 (S)	0.97	1.225
C4-Naphthalenes			1320	1.75 (S)		
C1-Acenaphthenes		ND		1.28 (S)		
C1-Fluorenes			85.8	2.27 (S)		
1,7-Dimethylfluorene	442-66-0		39.4	3.56 (S)	0.06	1.034
C2-Fluorenes			507	3.56 (S)		
C3-Fluorenes			812	4.83 (S)		
Dibenzothiophene	132-65-0		28.8	2.01 (S)	0.09	1.003
C1-Dibenzothiophenes			214	0.851 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		70.4	0.851 (S)	0.61	1.097
C2-Dibenzothiophenes			876	2.44 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		71.1	2.44 (S)	0.52	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		166	1.96 (S)	0.16	1.152
C3-Dibenzothiophenes			804	3.45 (S)		
C4-Dibenzothiophenes			322	3.04 (S)		
3-Methylphenanthrene	832-71-3		103	1.48 (S)	0.60	1.087
2-Methylphenanthrene	2531-84-2		122	1.43 (S)	0.57	1.092
2-Methylanthracene	613-12-7	ND		1.56 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		224	1.48 (S)	0.59	1.106
1-Methylphenanthrene	832-69-9		161	1.45 (S)	0.64	1.109
3,6-Dimethylphenanthrene	1576-67-6	NDR	88.6	1.23 (S)	0.91	1.164
2,6-Dimethylphenanthrene	17980-16-4		66.4	1.27 (S)	0.36	1.171
1,7-Dimethylphenanthrene	483-87-4		233	1.31 (S)	0.33	1.193
1,8-Dimethylphenanthrene	7372-87-4		78.9	1.27 (S)	0.36	1.209
C3-Phenanthrenes/Anthracenes			3400	4.27 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		62.8	4.27 (S)	0.65	1.293
Retene	483-65-8		282	4.31 (S)	1.40	1.301
C4-Phenanthrenes/Anthracenes			2230	4.31 (S)		
C1-Fluoranthenes/Pyrenes			210	2.23 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		58.3	2.23 (S)	1.17	1.301
C2-Fluoranthenes/Pyrenes			355	1.56 (S)		
C3-Fluoranthenes/Pyrenes			234	0.977 (S)		
C4-Fluoranthenes/Pyrenes			130	2.34 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			120	1.69 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		16.2	1.77 (S)		1.066
1-Methylchrysene	3351-28-8		18.9	1.61 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			99.0	0.664 (S)		
5,9-Dimethylchrysene	139493-40-6		26.2	0.664 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			25.2	2.40 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			4.98	2.22 (S)		
C1-Benzofluoranthenes/Benzopyrenes			37.2	3.68 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		3.68 (S)		
C2-Benzofluoranthenes/Benzopyrenes			8.63	2.86 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		199	1.75 (S)	0.03	1.377
Anthracene d-10			2620	4.70 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		14900	4.08 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2750	3.07 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-11_Form1A_PH5H0789.D_SJ3566468.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-04 18-JUL-24
Sample Collection:
18-Jul-2024 15:20

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-11
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 02:01:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0789.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1900	47.5	0.09	0.609
2-Methylnaphthalene d-10		4040	2210	54.8	0.19	0.756
Biphenyl d-10		4010	2370	59.2		0.868
2,6-Dimethylnaphthalene d-12		4020	2430	60.4	0.68	0.896
Acenaphthylene d-8		4020	2540	63.1	0.17	0.961
Dibenzothiophene d-8		4010	2520	62.8	0.08	0.792
Phenanthrene d-10		4010	3030	75.5	0.14	0.808
Benzo[a]anthracene d-12		4000	3580	89.5	0.22	1.164
Chrysene d-12		3220	2890	89.8	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3530	88.4	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3420	87.5	0.18	0.961
Benzo[a]pyrene d-12		4010	3460	86.3	0.18	1.009
Perylene d-12		4000	3470	86.7	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3390	85.3	0.17	1.205
Benzo[ghi]perylene d-12		3980	3460	86.9	0.19	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-11_Form2_PH5H0789.D_SJ3566468.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-US-05 18-JUL-24
Sample Collection:
18-Jul-2024 12:40

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-12
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 05:40:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0794.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		53.1	2.33 (S)	0.07	1.006
Acenaphthylene	208-96-8	ND		1.97 (S)		
Acenaphthene	83-32-9		37.4	1.79 (S)	1.10	1.047
2-Methylfluorene	1430-97-3		13.6	2.41 (S)	1.00	0.939
C2 Phenanthrenes/Anthracenes			428	1.16 (S)		
Fluorene	86-73-7		21.6	1.69 (S)	0.93	0.843
Phenanthrene	85-01-8		243	2.33 (S)	0.19	1.003
Anthracene	120-12-7		4.38	2.30 (S)	0.17	1.011
C1 Phenanthrenes/Anthracenes			358	1.84 (S)		
Fluoranthene	206-44-0		49.7	1.69 (S)	0.22	1.204
Pyrene	129-00-0	NDR	33.3	1.64 (S)	1.67	1.240
Benz[a]anthracene [3]	56-55-3	ND		2.95 (S)		
Chrysene [4]	218-01-9		61.3	3.06 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		5.07	2.03 (S)	0.25	1.004
Benzo[j,k]fluoranthenes		ND		2.11 (S)		
Benzo[e]pyrene	192-97-2		4.57	3.01 (S)	0.21	0.996
Benzo[a]pyrene	50-32-8	ND		2.82 (S)		
Perylene	198-55-0	NDR	4.52	2.98 (S)	0.17	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.51 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.56 (S)		
Benzo[ghi]perylene	191-24-2	ND		1.56 (S)		
2-Methylnaphthalene	91-57-6		27.9	1.33 (S)	0.88	1.008
1-Methylnaphthalene	90-12-0		22.6	1.47 (S)	0.88	1.040
C1-Naphthalenes			50.4	1.33 (S)		
Biphenyl	92-52-4		14.1	2.72 (S)	0.32	1.006
C1-Biphenyls			9.36	0.743 (S)		
C2-Biphenyls			21.4	2.09 (S)		
C2-Naphthalenes			122	1.92 (S)		
1,2-Dimethylnaphthalene	573-98-8	NDR	12.6	1.92 (S)	0.76	1.079

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		18.9	1.46 (S)	0.64	1.011
C3-Naphthalenes			240	2.04 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		72.9	2.08 (S)	0.95	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		49.2	2.01 (S)	0.99	1.226
C4-Naphthalenes			270	3.17 (S)		
C1-Acenaphthenes		ND		2.24 (S)		
C1-Fluorenes			38.9	2.41 (S)		
1,7-Dimethylfluorene	442-66-0	NDR	4.66	2.22 (S)	0.14	1.033
C2-Fluorenes			114	2.22 (S)		
C3-Fluorenes			208	1.68 (S)		
Dibenzothiophene	132-65-0		13.0	1.44 (S)	0.07	1.003
C1-Dibenzothiophenes			54.1	0.843 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		19.1	0.843 (S)	0.77	1.097
C2-Dibenzothiophenes			176	1.67 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		15.5	1.67 (S)	0.55	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		32.0	1.34 (S)	0.15	1.153
C3-Dibenzothiophenes			192	1.51 (S)		
C4-Dibenzothiophenes			41.8	2.80 (S)		
3-Methylphenanthrene	832-71-3		54.2	1.88 (S)	0.60	1.088
2-Methylphenanthrene	2531-84-2		65.5	1.82 (S)	0.57	1.091
2-Methylanthracene	613-12-7	ND		1.98 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		127	1.88 (S)	0.59	1.106
1-Methylphenanthrene	832-69-9		111	1.84 (S)	0.60	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	28.3	1.12 (S)	1.05	1.164
2,6-Dimethylphenanthrene	17980-16-4		12.6	1.16 (S)	0.48	1.170
1,7-Dimethylphenanthrene	483-87-4		81.7	1.19 (S)	0.31	1.192
1,8-Dimethylphenanthrene	7372-87-4	NDR	37.4	1.16 (S)	0.59	1.209
C3-Phenanthrenes/Anthracenes			2890	2.52 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		13.7	2.52 (S)	0.63	1.293
Retene	483-65-8		229	3.70 (S)	1.44	1.301
C4-Phenanthrenes/Anthracenes			573	3.70 (S)		
C1-Fluoranthenes/Pyrenes			54.8	1.76 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		20.4	1.76 (S)	1.19	1.301
C2-Fluoranthenes/Pyrenes			72.4	1.11 (S)		
C3-Fluoranthenes/Pyrenes			56.6	0.716 (S)		
C4-Fluoranthenes/Pyrenes			29.3	1.30 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			36.0	0.889 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		6.07	0.935 (S)		1.066
1-Methylchrysene	3351-28-8		5.84	0.848 (S)		1.074
C2-Benzo[a]anthracenes/Chrysenes [4]			22.7	1.70 (S)		
5,9-Dimethylchrysene	139493-40-6		2.69	1.70 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.70 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		2.95 (S)		
C1-Benzofluoranthenes/Benzopyrenes			16.5	3.57 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		3.57 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.68 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		41.3	3.17 (S)	0.03	1.377
Anthracene d-10			3410	0.933 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		17300	2.73 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2730	1.81 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-12_Form1A_PH5H0794.D_SJ3566469.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-05 18-JUL-24
Sample Collection:
18-Jul-2024 12:40

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-12
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 05:40:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0794.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	2170	54.2	0.09	0.610
2-Methylnaphthalene d-10		4040	2600	64.3	0.19	0.756
Biphenyl d-10		4010	2770	69.0		0.868
2,6-Dimethylnaphthalene d-12		4020	2810	69.9	0.68	0.896
Acenaphthylene d-8		4020	2880	71.8	0.17	0.961
Dibenzothiophene d-8		4010	2630	65.6	0.08	0.792
Phenanthrene d-10		4010	3240	80.8	0.14	0.808
Benzo[a]anthracene d-12		4000	3530	88.3	0.22	1.164
Chrysene d-12		3220	2850	88.7	0.26	1.169
Benzo[b]fluoranthene d-12		3990	3470	87.0	0.18	0.957
Benzo[k]fluoranthene d-12		3910	3400	86.9	0.18	0.961
Benzo[a]pyrene d-12		4010	3450	86.1	0.18	1.009
Perylene d-12		4000	3510	87.8	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3320	83.5	0.17	1.205
Benzo[ghi]perylene d-12		3980	3480	87.3	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-12_Form2_PH5H0794.D_SJ3566469.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-01 18-JUL-24
Sample Collection:
18-Jul-2024 11:00

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-13
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 06:29:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0795.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		52.6	1.36 (S)	0.06	1.006
Acenaphthylene	208-96-8		3.15	1.73 (S)	0.21	1.003
Acenaphthene	83-32-9		55.4	3.23 (S)	1.22	1.048
2-Methylfluorene	1430-97-3		96.9	3.56 (S)	1.21	0.939
C2 Phenanthrenes/Anthracenes			606	3.05 (S)		
Fluorene	86-73-7		64.5	0.767 (S)	0.83	0.844
Phenanthrene	85-01-8		287	1.02 (S)	0.19	1.004
Anthracene	120-12-7		12.0	1.01 (S)	0.20	1.011
C1 Phenanthrenes/Anthracenes			299	1.72 (S)		
Fluoranthene	206-44-0		235	1.56 (S)	0.20	1.204
Pyrene	129-00-0	NDR	228	1.51 (S)	0.33	1.240
Benz[a]anthracene [3]	56-55-3		13.1	0.875 (S)	0.23	1.002
Chrysene [4]	218-01-9		75.4	0.892 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		9.16	2.61 (S)	0.24	1.004
Benzo[j,k]fluoranthenes			6.20	2.68 (S)	0.22	1.002
Benzo[e]pyrene	192-97-2		14.0	3.72 (S)	0.19	0.996
Benzo[a]pyrene	50-32-8	ND		3.49 (S)		
Perylene	198-55-0	ND		3.83 (S)		
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.54 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.22 (S)		
Benzo[ghi]perylene	191-24-2	ND		1.30 (S)		
2-Methylnaphthalene	91-57-6		49.7	1.02 (S)	0.89	1.009
1-Methylnaphthalene	90-12-0		43.5	1.13 (S)	0.95	1.040
C1-Naphthalenes			93.2	1.02 (S)		
Biphenyl	92-52-4		16.2	1.03 (S)	0.30	1.005
C1-Biphenyls			20.3	1.36 (S)		
C2-Biphenyls			46.1	1.33 (S)		
C2-Naphthalenes			474	2.94 (S)		
1,2-Dimethylnaphthalene	573-98-8		55.9	2.94 (S)	1.35	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		74.4	2.23 (S)	0.70	1.011
C3-Naphthalenes			993	1.12 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		183	1.14 (S)	0.89	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		162	1.10 (S)	1.01	1.228
C4-Naphthalenes			1420	3.35 (S)		
C1-Acenaphthenes			9.08	1.82 (S)		
C1-Fluorenes			245	3.56 (S)		
1,7-Dimethylfluorene	442-66-0		169	1.45 (S)	0.08	1.031
C2-Fluorenes			668	1.45 (S)		
C3-Fluorenes			700	4.31 (S)		
Dibenzothiophene	132-65-0	NDR	31.0	1.41 (S)	0.17	1.003
C1-Dibenzothiophenes			232	1.22 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		87.4	1.22 (S)	0.60	1.094
C2-Dibenzothiophenes			621	1.37 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		53.5	1.37 (S)	0.45	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		106	1.10 (S)	0.16	1.152
C3-Dibenzothiophenes			393	3.42 (S)		
C4-Dibenzothiophenes			115	3.57 (S)		
3-Methylphenanthrene	832-71-3		61.5	1.75 (S)	0.62	1.088
2-Methylphenanthrene	2531-84-2		67.6	1.70 (S)	0.55	1.092
2-Methylanthracene	613-12-7	ND		1.85 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		98.6	1.75 (S)	0.64	1.106
1-Methylphenanthrene	832-69-9		71.4	1.72 (S)	0.62	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	45.3	2.96 (S)	0.94	1.164
2,6-Dimethylphenanthrene	17980-16-4		25.7	3.05 (S)	0.39	1.171
1,7-Dimethylphenanthrene	483-87-4		67.5	3.15 (S)	0.37	1.193
1,8-Dimethylphenanthrene	7372-87-4	NDR	41.6	3.05 (S)	0.51	1.209
C3-Phenanthrenes/Anthracenes			2310	0.944 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		25.0	0.944 (S)	0.57	1.293
Retene	483-65-8		120	4.65 (S)	1.46	1.302
C4-Phenanthrenes/Anthracenes			910	4.65 (S)		
C1-Fluoranthenes/Pyrenes			138	1.19 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		45.0	1.19 (S)	1.03	1.301
C2-Fluoranthenes/Pyrenes			188	0.811 (S)		
C3-Fluoranthenes/Pyrenes			142	1.07 (S)		
C4-Fluoranthenes/Pyrenes			79.7	3.10 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			76.4	1.02 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		8.66	1.08 (S)		1.066
1-Methylchrysene	3351-28-8		11.0	0.975 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			65.6	0.850 (S)		
5,9-Dimethylchrysene	139493-40-6		11.4	0.850 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			19.4	1.80 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			4.07	3.20 (S)		
C1-Benzofluoranthenes/Benzopyrenes			29.4	1.38 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		2.94	1.38 (S)		1.109
C2-Benzofluoranthenes/Benzopyrenes		ND		4.14 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		275	3.35 (S)	0.03	1.377
Anthracene d-10			9580	2.86 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		23900	2.93 (S)	0.17	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2750	2.61 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-01 18-JUL-24
Sample Collection:
18-Jul-2024 11:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-13
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 06:29:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0795.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	2350	58.7	0.10	0.609
2-Methylnaphthalene d-10		4040	2730	67.5	0.19	0.756
Biphenyl d-10		4010	2850	71.0		0.868
2,6-Dimethylnaphthalene d-12		4020	2880	71.6	0.68	0.896
Acenaphthylene d-8		4020	2980	74.1	0.17	0.961
Dibenzothiophene d-8		4010	2470	61.7	0.08	0.792
Phenanthrene d-10		4010	3200	79.8	0.14	0.808
Benzo[a]anthracene d-12		4000	3660	91.6	0.22	1.164
Chrysene d-12		3220	2980	92.6	0.25	1.170
Benzo[b]fluoranthene d-12		3990	3710	92.9	0.18	0.957
Benzo[k]fluoranthene d-12		3910	3470	88.9	0.18	0.961
Benzo[a]pyrene d-12		4010	3550	88.7	0.18	1.008
Perylene d-12		4000	3570	89.1	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3450	87.0	0.16	1.205
Benzo[ghi]perylene d-12		3980	3560	89.4	0.18	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-13_Form2_PH5H0795.D_SJ3566470.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-02 20-JUL-24
Sample Collection:
20-Jul-2024 17:05

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L41307-14
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	20-Aug-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	22-Jan-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	13-Feb-2025 **Time:** 07:19:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H0796.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H0781.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		117	2.11 (S)	0.07	1.007
Acenaphthylene	208-96-8	ND		5.06 (S)		
Acenaphthene	83-32-9		71.3	1.80 (S)	1.15	1.048
2-Methylfluorene	1430-97-3		1090	7.98 (S)	1.22	0.939
C2 Phenanthrenes/Anthracenes			26800	6.60 (S)		
Fluorene	86-73-7		275	0.676 (S)	1.16	0.844
Phenanthrene	85-01-8		2310	10.2 (S)	0.19	1.004
Anthracene	120-12-7	ND		10.0 (S)		
C1 Phenanthrenes/Anthracenes			17100	30.8 (S)		
Fluoranthene	206-44-0		166	4.85 (S)	0.20	1.205
Pyrene	129-00-0		465	4.72 (S)	0.23	1.241
Benz[a]anthracene [3]	56-55-3		24.0	1.77 (S)	0.29	1.002
Chrysene [4]	218-01-9		428	1.90 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		19.4	6.33 (S)	0.22	1.004
Benzo[j,k]fluoranthenes		ND		6.61 (S)		
Benzo[e]pyrene	192-97-2		61.1	8.98 (S)	0.24	0.996
Benzo[a]pyrene	50-32-8	ND		8.42 (S)		
Perylene	198-55-0		100	9.29 (S)	0.23	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		2.64 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		2.81 (S)		
Benzo[ghi]perylene	191-24-2		11.3	2.81 (S)	0.17	1.003
2-Methylnaphthalene	91-57-6		435	1.41 (S)	0.91	1.008
1-Methylnaphthalene	90-12-0		519	1.56 (S)	0.92	1.040
C1-Naphthalenes			955	1.41 (S)		
Biphenyl	92-52-4		87.0	2.20 (S)	0.29	1.005
C1-Biphenyls			292	3.34 (S)		
C2-Biphenyls			797	1.88 (S)		
C2-Naphthalenes			8600	5.72 (S)		
1,2-Dimethylnaphthalene	573-98-8		506	5.72 (S)	1.21	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		1520	4.35 (S)	0.66	1.011
C3-Naphthalenes			24600	6.23 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		8160	6.35 (S)	0.89	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		4780	6.12 (S)	0.99	1.226
C4-Naphthalenes			23300	4.73 (S)		
C1-Acenaphthenes			18.6	4.50 (S)		
C1-Fluorenes			3180	7.98 (S)		
1,7-Dimethylfluorene	442-66-0		3730	2.31 (S)	0.08	1.031
C2-Fluorenes			12700	2.31 (S)		
C3-Fluorenes			15300	4.20 (S)		
Dibenzothiophene	132-65-0	NDR	981	4.39 (S)	0.15	1.003
C1-Dibenzothiophenes			8340	4.75 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		2400	4.75 (S)	0.70	1.094
C2-Dibenzothiophenes			17000	4.34 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		1590	4.34 (S)	0.58	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		2940	3.48 (S)	0.14	1.152
C3-Dibenzothiophenes			6850	7.50 (S)		
C4-Dibenzothiophenes			1590	3.56 (S)		
3-Methylphenanthrene	832-71-3		3360	30.8 (S)	0.59	1.088
2-Methylphenanthrene	2531-84-2		3780	30.8 (S)	0.58	1.092
2-Methylanthracene	613-12-7	ND		30.8 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		6260	30.8 (S)	0.58	1.106
1-Methylphenanthrene	832-69-9		3730	30.8 (S)	0.63	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	1640	6.40 (S)	0.78	1.164
2,6-Dimethylphenanthrene	17980-16-4		1280	6.60 (S)	0.37	1.171
1,7-Dimethylphenanthrene	483-87-4		3870	6.81 (S)	0.32	1.193
1,8-Dimethylphenanthrene	7372-87-4		1030	6.60 (S)	0.35	1.209
C3-Phenanthrenes/Anthracenes			13800	3.17 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		531	3.17 (S)	0.53	1.293
Retene	483-65-8		795	8.06 (S)	1.42	1.302
C4-Phenanthrenes/Anthracenes			10500	8.06 (S)		
C1-Fluoranthenes/Pyrenes			1640	3.18 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		498	3.18 (S)	0.97	1.301
C2-Fluoranthenes/Pyrenes			1620	5.09 (S)		
C3-Fluoranthenes/Pyrenes			890	3.54 (S)		
C4-Fluoranthenes/Pyrenes			340	1.41 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			421	2.40 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		57.3	2.52 (S)		1.066
1-Methylchrysene	3351-28-8		66.6	2.29 (S)		1.074
C2-Benzo[a]anthracenes/Chrysenes [4]			386	4.15 (S)		
5,9-Dimethylchrysene	139493-40-6		87.0	4.15 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			59.0	8.70 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			37.2	5.34 (S)		
C1-Benzofluoranthenes/Benzopyrenes			132	2.70 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		9.37	2.70 (S)		1.109
C2-Benzofluoranthenes/Benzopyrenes			61.1	2.54 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		3280	4.73 (S)	0.03	1.377
Anthracene d-10			743	4.59 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		9210	4.15 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2700	3.90 (S)	0.22	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

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Report Filename: PAH_PAH_LO_LPAHF_L41307-14_Form1A_PH5H0796.D_SJ3566471.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-02 20-JUL-24
Sample Collection:
20-Jul-2024 17:05

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-14
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 07:19:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0796.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1900	47.3	0.09	0.609
2-Methylnaphthalene d-10		4040	2380	58.9	0.19	0.756
Biphenyl d-10		4010	2580	64.3		0.868
2,6-Dimethylnaphthalene d-12		4020	2670	66.3	0.67	0.896
Acenaphthylene d-8		4020	2820	70.3	0.17	0.961
Dibenzothiophene d-8		4010	2760	68.7	0.08	0.792
Phenanthrene d-10		4010	3160	78.9	0.14	0.808
Benzo[a]anthracene d-12		4000	3520	88.0	0.22	1.164
Chrysene d-12		3220	2810	87.5	0.26	1.170
Benzo[b]fluoranthene d-12		3990	3530	88.6	0.18	0.957
Benzo[k]fluoranthene d-12		3910	3390	86.7	0.18	0.961
Benzo[a]pyrene d-12		4010	3440	85.9	0.18	1.009
Perylene d-12		4000	3470	86.8	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3390	85.5	0.17	1.205
Benzo[ghi]perylene d-12		3980	3470	87.1	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-14_Form2_PH5H0796.D_SJ3566471.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-03 19-JUL-24
Sample Collection:
19-Jul-2024 12:18

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-15
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 08:08:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0797.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		53.9	2.12 (S)	0.07	1.007
Acenaphthylene	208-96-8	ND		4.32 (S)		
Acenaphthene	83-32-9		28.9	2.17 (S)	1.13	1.048
2-Methylfluorene	1430-97-3		15.9	1.61 (S)	1.23	0.939
C2 Phenanthrenes/Anthracenes			333	1.28 (S)		
Fluorene	86-73-7		20.3	3.72 (S)	1.02	0.843
Phenanthrene	85-01-8		157	2.69 (S)	0.19	1.003
Anthracene	120-12-7	ND		2.65 (S)		
C1 Phenanthrenes/Anthracenes			309	1.43 (S)		
Fluoranthene	206-44-0		67.3	1.46 (S)	0.20	1.204
Pyrene	129-00-0	NDR	91.4	1.43 (S)	0.45	1.240
Benz[a]anthracene [3]	56-55-3		2.98	2.82 (S)	0.25	1.002
Chrysene [4]	218-01-9		44.3	2.82 (S)	0.32	1.002
Benzo[b]fluoranthene	205-99-2		7.31	1.45 (S)	0.24	1.004
Benzo[j,k]fluoranthenes		ND		1.51 (S)		
Benzo[e]pyrene	192-97-2	NDR	17.0	2.05 (S)	2.16	0.996
Benzo[a]pyrene	50-32-8	ND		1.92 (S)		
Perylene	198-55-0		55.9	2.11 (S)	0.17	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.14 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.11 (S)		
Benzo[ghi]perylene	191-24-2		6.94	1.09 (S)	0.22	1.002
2-Methylnaphthalene	91-57-6		32.3	1.52 (S)	0.89	1.009
1-Methylnaphthalene	90-12-0		27.4	1.68 (S)	0.94	1.040
C1-Naphthalenes			59.8	1.52 (S)		
Biphenyl	92-52-4		12.5	4.28 (S)	0.28	1.005
C1-Biphenyls			18.2	1.53 (S)		
C2-Biphenyls			40.4	2.07 (S)		
C2-Naphthalenes			179	3.63 (S)		
1,2-Dimethylnaphthalene	573-98-8		9.20	3.63 (S)	1.05	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		28.4	2.76 (S)	0.65	1.011
C3-Naphthalenes			354	1.61 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		96.5	1.64 (S)	0.96	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		68.3	1.58 (S)	1.02	1.226
C4-Naphthalenes			329	0.799 (S)		
C1-Acenaphthenes		ND		0.931 (S)		
C1-Fluorenes			47.5	1.61 (S)		
1,7-Dimethylfluorene	442-66-0	ND		3.75 (S)		
C2-Fluorenes			143	3.75 (S)		
C3-Fluorenes			202	1.70 (S)		
Dibenzothiophene	132-65-0		11.5	1.62 (S)	0.08	1.003
C1-Dibenzothiophenes			46.6	1.64 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		20.3	1.64 (S)	0.69	1.098
C2-Dibenzothiophenes			107	2.89 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		10.2	2.89 (S)	0.56	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		16.5	2.32 (S)	0.16	1.153
C3-Dibenzothiophenes			86.4	4.81 (S)		
C4-Dibenzothiophenes			22.4	1.32 (S)		
3-Methylphenanthrene	832-71-3		52.9	1.46 (S)	0.59	1.088
2-Methylphenanthrene	2531-84-2		62.1	1.41 (S)	0.61	1.091
2-Methylanthracene	613-12-7	NDR	2.44	1.54 (S)	1.60	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		109	1.46 (S)	0.60	1.106
1-Methylphenanthrene	832-69-9		85.3	1.43 (S)	0.64	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	23.1	1.24 (S)	0.95	1.164
2,6-Dimethylphenanthrene	17980-16-4		14.4	1.28 (S)	0.42	1.171
1,7-Dimethylphenanthrene	483-87-4		58.7	1.32 (S)	0.35	1.193
1,8-Dimethylphenanthrene	7372-87-4		17.4	1.28 (S)	0.48	1.209
C3-Phenanthrenes/Anthracenes			1140	4.18 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		8.76	4.18 (S)	0.53	1.292
Retene	483-65-8		341	6.26 (S)	1.53	1.301
C4-Phenanthrenes/Anthracenes			532	6.26 (S)		
C1-Fluoranthenes/Pyrenes			126	1.12 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		44.5	1.12 (S)	1.09	1.300
C2-Fluoranthenes/Pyrenes			71.9	0.673 (S)		
C3-Fluoranthenes/Pyrenes			35.4	1.12 (S)		
C4-Fluoranthenes/Pyrenes			16.5	3.27 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			33.5	1.04 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		2.84	1.10 (S)		1.066
1-Methylchrysene	3351-28-8		4.74	0.994 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			16.2	2.12 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		2.12 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.71 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			2.42	2.31 (S)		
C1-Benzofluoranthenes/Benzopyrenes			10.5	4.11 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		4.11 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		4.35 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		41.7	0.799 (S)	0.03	1.377
Anthracene d-10			1590	1.67 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		13500	2.01 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2510	3.58 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-15_Form1A_PH5H0797.D_SJ3566472.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-03 19-JUL-24
Sample Collection:
19-Jul-2024 12:18

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-15
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 08:08:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0797.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1770	44.2	0.10	0.609
2-Methylnaphthalene d-10		4040	2130	52.8	0.19	0.756
Biphenyl d-10		4010	2310	57.6		0.868
2,6-Dimethylnaphthalene d-12		4020	2360	58.7	0.68	0.896
Acenaphthylene d-8		4020	2450	60.9	0.17	0.961
Dibenzothiophene d-8		4010	2460	61.3	0.08	0.792
Phenanthrene d-10		4010	2900	72.2	0.14	0.808
Benzo[a]anthracene d-12		4000	3470	86.8	0.22	1.164
Chrysene d-12		3220	2850	88.6	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3520	88.3	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3440	88.0	0.18	0.961
Benzo[a]pyrene d-12		4010	3470	86.5	0.18	1.008
Perylene d-12		4000	3500	87.6	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3350	84.4	0.17	1.205
Benzo[ghi]perylene d-12		3980	3510	88.1	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-15_Form2_PH5H0797.D_SJ3566472.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-04 20-JUL-24
Sample Collection:
20-Jul-2024 16:26

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-16
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 09:02:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0798.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		85.3	1.22 (S)	0.07	1.006
Acenaphthylene	208-96-8	ND		4.99 (S)		
Acenaphthene	83-32-9		45.4	1.77 (S)	1.06	1.048
2-Methylfluorene	1430-97-3		439	3.33 (S)	1.27	0.939
C2 Phenanthrenes/Anthracenes			9980	6.89 (S)		
Fluorene	86-73-7		160	0.641 (S)	1.10	0.844
Phenanthrene	85-01-8		1020	10.1 (S)	0.19	1.004
Anthracene	120-12-7		47.9	9.96 (S)	0.18	1.016
C1 Phenanthrenes/Anthracenes			6160	8.54 (S)		
Fluoranthene	206-44-0		95.9	2.08 (S)	0.20	1.205
Pyrene	129-00-0		222	2.02 (S)	0.22	1.241
Benz[a]anthracene [3]	56-55-3	NDR	15.2	1.21 (S)	0.52	1.002
Chrysene [4]	218-01-9		228	1.27 (S)	0.32	1.002
Benzo[b]fluoranthene	205-99-2		16.5	2.36 (S)	0.23	1.004
Benzo[j,k]fluoranthenes		ND		2.45 (S)		
Benzo[e]pyrene	192-97-2	NDR	49.9	3.43 (S)	0.51	0.996
Benzo[a]pyrene	50-32-8	ND		3.22 (S)		
Perylene	198-55-0		81.2	3.53 (S)	0.23	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.97 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.19 (S)		
Benzo[ghi]perylene	191-24-2		10.4	1.18 (S)	0.15	1.002
2-Methylnaphthalene	91-57-6		355	2.03 (S)	0.91	1.008
1-Methylnaphthalene	90-12-0		390	2.24 (S)	0.93	1.040
C1-Naphthalenes			745	2.03 (S)		
Biphenyl	92-52-4		65.2	0.879 (S)	0.30	1.005
C1-Biphenyls			182	0.498 (S)		
C2-Biphenyls			364	0.557 (S)		
C2-Naphthalenes			6510	3.20 (S)		
1,2-Dimethylnaphthalene	573-98-8		343	3.20 (S)	1.20	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		1260	2.44 (S)	0.65	1.011
C3-Naphthalenes			13300	3.23 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		4380	3.29 (S)	0.90	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		2420	3.17 (S)	1.01	1.225
C4-Naphthalenes			9170	8.38 (S)		
C1-Acenaphthenes			11.8	0.716 (S)		
C1-Fluorenes			1360	3.33 (S)		
1,7-Dimethylfluorene	442-66-0		1320	1.87 (S)	0.09	1.032
C2-Fluorenes			4520	1.87 (S)		
C3-Fluorenes			10100	6.83 (S)		
Dibenzothiophene	132-65-0	NDR	470	5.68 (S)	0.15	1.003
C1-Dibenzothiophenes			3080	6.43 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		904	6.43 (S)	0.72	1.095
C2-Dibenzothiophenes			6450	3.00 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		593	3.00 (S)	0.57	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		1120	2.41 (S)	0.14	1.152
C3-Dibenzothiophenes			3560	2.40 (S)		
C4-Dibenzothiophenes			1290	5.67 (S)		
3-Methylphenanthrene	832-71-3		1220	8.71 (S)	0.59	1.087
2-Methylphenanthrene	2531-84-2		1350	8.44 (S)	0.57	1.092
2-Methylanthracene	613-12-7	ND		9.20 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		2210	8.71 (S)	0.58	1.106
1-Methylphenanthrene	832-69-9		1380	8.54 (S)	0.64	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	558	6.69 (S)	0.84	1.165
2,6-Dimethylphenanthrene	17980-16-4		521	6.89 (S)	0.39	1.171
1,7-Dimethylphenanthrene	483-87-4		1490	7.11 (S)	0.32	1.193
1,8-Dimethylphenanthrene	7372-87-4		383	6.89 (S)	0.37	1.209
C3-Phenanthrenes/Anthracenes			5860	7.86 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		272	7.86 (S)	0.61	1.293
Retene	483-65-8		676	8.75 (S)	1.29	1.302
C4-Phenanthrenes/Anthracenes			7070	8.75 (S)		
C1-Fluoranthenes/Pyrenes			743	2.88 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		236	2.88 (S)	1.06	1.301
C2-Fluoranthenes/Pyrenes			1120	1.53 (S)		
C3-Fluoranthenes/Pyrenes			718	1.62 (S)		
C4-Fluoranthenes/Pyrenes			414	3.78 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			350	2.73 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		49.7	2.87 (S)		1.065
1-Methylchrysene	3351-28-8		53.5	2.60 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			453	1.52 (S)		
5,9-Dimethylchrysene	139493-40-6		99.4	1.52 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			82.3	3.07 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			42.9	5.15 (S)		
C1-Benzofluoranthenes/Benzopyrenes			110	5.73 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		15.1	5.73 (S)		1.109
C2-Benzofluoranthenes/Benzopyrenes			66.1	4.11 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		1230	8.38 (S)	0.03	1.377
Anthracene d-10			966	1.45 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		10300	4.62 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2660	4.86 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-16_Form1A_PH5H0798.D_SJ3566473.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-04 20-JUL-24
Sample Collection:
20-Jul-2024 16:26

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-16
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 09:02:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0798.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	2270	56.7	0.09	0.610
2-Methylnaphthalene d-10		4040	2690	66.6	0.19	0.756
Biphenyl d-10		4010	2790	69.6		0.868
2,6-Dimethylnaphthalene d-12		4020	2850	70.8	0.68	0.896
Acenaphthylene d-8		4020	2930	72.8	0.16	0.961
Dibenzothiophene d-8		4010	2490	62.0	0.08	0.792
Phenanthrene d-10		4010	2910	72.6	0.14	0.808
Benzo[a]anthracene d-12		4000	3420	85.5	0.22	1.164
Chrysene d-12		3220	2740	85.3	0.25	1.170
Benzo[b]fluoranthene d-12		3990	3410	85.5	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3250	83.2	0.18	0.961
Benzo[a]pyrene d-12		4010	3310	82.5	0.18	1.009
Perylene d-12		4000	3320	83.0	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3240	81.6	0.17	1.206
Benzo[ghi]perylene d-12		3980	3320	83.4	0.18	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-16_Form2_PH5H0798.D_SJ3566473.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-05 19-JUL-24
Sample Collection:
19-Jul-2024 09:36

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-17
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 09:52:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0799.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

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This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		43.0	1.35 (S)	0.06	1.006
Acenaphthylene	208-96-8	ND		3.19 (S)		
Acenaphthene	83-32-9		18.9	0.857 (S)	1.29	1.047
2-Methylfluorene	1430-97-3		18.4	1.06 (S)	1.21	0.939
C2 Phenanthrenes/Anthracenes			549	0.869 (S)		
Fluorene	86-73-7		17.0	1.29 (S)	0.94	0.843
Phenanthrene	85-01-8		140	3.11 (S)	0.20	1.003
Anthracene	120-12-7		4.62	3.07 (S)	0.22	1.011
C1 Phenanthrenes/Anthracenes			402	2.21 (S)		
Fluoranthene	206-44-0		66.0	1.19 (S)	0.21	1.204
Pyrene	129-00-0	NDR	110	1.16 (S)	0.52	1.240
Benz[a]anthracene [3]	56-55-3	NDR	3.20	3.15 (S)	0.99	1.002
Chrysene [4]	218-01-9		52.0	3.26 (S)	0.33	1.002
Benzo[b]fluoranthene	205-99-2		7.11	1.69 (S)	0.24	1.004
Benzo[j,k]fluoranthenes		ND		1.76 (S)		
Benzo[e]pyrene	192-97-2	NDR	19.7	2.45 (S)	1.98	0.996
Benzo[a]pyrene	50-32-8	ND		2.30 (S)		
Perylene	198-55-0		58.3	2.45 (S)	0.25	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.823 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.71 (S)		
Benzo[ghi]perylene	191-24-2		6.15	1.70 (S)	0.20	1.002
2-Methylnaphthalene	91-57-6		24.7	1.57 (S)	0.97	1.009
1-Methylnaphthalene	90-12-0		24.3	1.73 (S)	0.89	1.040
C1-Naphthalenes			49.0	1.57 (S)		
Biphenyl	92-52-4		9.76	3.01 (S)	0.31	1.005
C1-Biphenyls			15.2	1.70 (S)		
C2-Biphenyls			37.2	1.97 (S)		
C2-Naphthalenes			217	0.745 (S)		
1,2-Dimethylnaphthalene	573-98-8		13.9	0.745 (S)	1.11	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		32.0	0.567 (S)	0.70	1.011
C3-Naphthalenes			498	1.77 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		137	1.80 (S)	0.91	1.204
2,3,5-Trimethylnaphthalene	2245-38-7		92.7	1.74 (S)	0.97	1.225
C4-Naphthalenes			490	1.91 (S)		
C1-Acenaphthenes		ND		1.40 (S)		
C1-Fluorenes			64.2	1.06 (S)		
1,7-Dimethylfluorene	442-66-0	ND		5.20 (S)		
C2-Fluorenes			201	5.20 (S)		
C3-Fluorenes			282	1.29 (S)		
Dibenzothiophene	132-65-0		12.1	1.20 (S)	0.08	1.003
C1-Dibenzothiophenes			97.9	1.68 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		36.6	1.68 (S)	0.59	1.097
C2-Dibenzothiophenes			187	2.01 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		19.0	2.01 (S)	0.40	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		32.8	1.61 (S)	0.17	1.153
C3-Dibenzothiophenes			147	6.83 (S)		
C4-Dibenzothiophenes			41.4	1.41 (S)		
3-Methylphenanthrene	832-71-3		71.6	2.25 (S)	0.54	1.088
2-Methylphenanthrene	2531-84-2		83.1	2.18 (S)	0.56	1.091
2-Methylanthracene	613-12-7	ND		2.38 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		146	2.25 (S)	0.60	1.106
1-Methylphenanthrene	832-69-9		102	2.21 (S)	0.70	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	38.0	0.843 (S)	0.84	1.164
2,6-Dimethylphenanthrene	17980-16-4		24.4	0.869 (S)	0.41	1.170
1,7-Dimethylphenanthrene	483-87-4		88.7	0.897 (S)	0.32	1.193
1,8-Dimethylphenanthrene	7372-87-4		27.6	0.869 (S)	0.40	1.209
C3-Phenanthrenes/Anthracenes			1680	3.52 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		14.5	3.52 (S)	0.50	1.292
Retene	483-65-8		405	5.71 (S)	1.52	1.301
C4-Phenanthrenes/Anthracenes			726	5.71 (S)		
C1-Fluoranthenes/Pyrenes			164	0.848 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		54.6	0.848 (S)	1.08	1.300
C2-Fluoranthenes/Pyrenes			103	1.14 (S)		
C3-Fluoranthenes/Pyrenes			49.7	0.848 (S)		
C4-Fluoranthenes/Pyrenes			25.3	1.11 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			37.7	1.03 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		3.21	1.08 (S)		1.066
1-Methylchrysene	3351-28-8		6.18	0.983 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			18.8	1.13 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		1.13 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.50 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			2.94	1.75 (S)		
C1-Benzofluoranthenes/Benzopyrenes			16.0	4.29 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		4.29 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		4.54 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		66.4	1.91 (S)	0.03	1.377
Anthracene d-10			1320	2.07 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		11800	2.77 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2700	3.82 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-17_Form1A_PH5H0799.D_SJ3566474.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-05 19-JUL-24
Sample Collection:
19-Jul-2024 09:36

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-17
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 09:52:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0799.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1600	40.0	0.10	0.609
2-Methylnaphthalene d-10		4040	2060	50.9	0.19	0.756
Biphenyl d-10		4010	2270	56.6		0.868
2,6-Dimethylnaphthalene d-12		4020	2310	57.4	0.69	0.896
Acenaphthylene d-8		4020	2420	60.1	0.17	0.961
Dibenzothiophene d-8		4010	2270	56.5	0.08	0.792
Phenanthrene d-10		4010	2780	69.4	0.14	0.808
Benzo[a]anthracene d-12		4000	3370	84.2	0.22	1.164
Chrysene d-12		3220	2750	85.5	0.25	1.170
Benzo[b]fluoranthene d-12		3990	3390	85.0	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3240	82.8	0.18	0.961
Benzo[a]pyrene d-12		4010	3300	82.3	0.18	1.008
Perylene d-12		4000	3310	82.8	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3180	80.1	0.17	1.205
Benzo[ghi]perylene d-12		3980	3330	83.8	0.18	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-17_Form2_PH5H0799.D_SJ3566474.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-08 19-JUL-24
Sample Collection:
19-Jul-2024 10:34

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-18
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 10:41:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0800.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		41.4	2.93 (S)	0.06	1.007
Acenaphthylene	208-96-8	ND		3.07 (S)		
Acenaphthene	83-32-9		21.8	1.17 (S)	1.10	1.048
2-Methylfluorene	1430-97-3		18.9	2.86 (S)	1.23	0.939
C2 Phenanthrenes/Anthracenes			562	2.60 (S)		
Fluorene	86-73-7		16.2	1.56 (S)	1.03	0.844
Phenanthrene	85-01-8		143	3.76 (S)	0.19	1.004
Anthracene	120-12-7	ND		3.71 (S)		
C1 Phenanthrenes/Anthracenes			401	1.79 (S)		
Fluoranthene	206-44-0		71.6	2.06 (S)	0.21	1.205
Pyrene	129-00-0	NDR	115	2.01 (S)	0.31	1.241
Benz[a]anthracene [3]	56-55-3	ND		3.01 (S)		
Chrysene [4]	218-01-9		59.1	3.06 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		7.81	1.23 (S)	0.21	1.004
Benzo[j,k]fluoranthenes		ND		1.29 (S)		
Benzo[e]pyrene	192-97-2	NDR	22.4	1.81 (S)	1.75	0.996
Benzo[a]pyrene	50-32-8	ND		1.70 (S)		
Perylene	198-55-0		63.2	1.83 (S)	0.22	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.31 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.34 (S)		
Benzo[ghi]perylene	191-24-2		6.64	1.33 (S)	0.22	1.003
2-Methylnaphthalene	91-57-6		24.4	1.57 (S)	0.98	1.009
1-Methylnaphthalene	90-12-0		23.5	1.73 (S)	0.97	1.040
C1-Naphthalenes			47.8	1.57 (S)		
Biphenyl	92-52-4		10.9	3.16 (S)	0.33	1.005
C1-Biphenyls			15.9	1.98 (S)		
C2-Biphenyls			45.9	3.12 (S)		
C2-Naphthalenes			206	5.74 (S)		
1,2-Dimethylnaphthalene	573-98-8		14.8	5.74 (S)	1.04	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		30.6	4.37 (S)	0.70	1.011
C3-Naphthalenes			474	2.65 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		148	2.69 (S)	0.90	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		99.9	2.60 (S)	0.94	1.225
C4-Naphthalenes			596	1.47 (S)		
C1-Acenaphthenes		ND		0.766 (S)		
C1-Fluorenes			71.9	2.86 (S)		
1,7-Dimethylfluorene	442-66-0		37.2	1.09 (S)	0.08	1.032
C2-Fluorenes			219	1.09 (S)		
C3-Fluorenes			256	2.51 (S)		
Dibenzothiophene	132-65-0		13.8	1.71 (S)	0.09	1.003
C1-Dibenzothiophenes			81.8	2.63 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		38.9	2.63 (S)	0.72	1.097
C2-Dibenzothiophenes			208	2.62 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		17.0	2.62 (S)	0.42	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		34.2	2.10 (S)	0.17	1.153
C3-Dibenzothiophenes			126	2.07 (S)		
C4-Dibenzothiophenes			32.6	1.74 (S)		
3-Methylphenanthrene	832-71-3		70.6	1.83 (S)	0.61	1.087
2-Methylphenanthrene	2531-84-2		73.1	1.77 (S)	0.63	1.092
2-Methylanthracene	613-12-7	NDR	3.71	1.93 (S)	1.99	1.098
9/4-Methylphenanthrene	883-20-5/832-64-4		154	1.83 (S)	0.59	1.106
1-Methylphenanthrene	832-69-9		104	1.79 (S)	0.69	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	36.1	2.52 (S)	0.86	1.165
2,6-Dimethylphenanthrene	17980-16-4		23.9	2.60 (S)	0.41	1.171
1,7-Dimethylphenanthrene	483-87-4		92.5	2.68 (S)	0.35	1.193
1,8-Dimethylphenanthrene	7372-87-4		26.0	2.60 (S)	0.46	1.209
C3-Phenanthrenes/Anthracenes			1060	3.09 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		17.3	3.09 (S)	0.49	1.293
Retene	483-65-8		451	5.19 (S)	1.55	1.302
C4-Phenanthrenes/Anthracenes			791	5.19 (S)		
C1-Fluoranthenes/Pyrenes			179	0.905 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		62.8	0.905 (S)	1.04	1.301
C2-Fluoranthenes/Pyrenes			128	2.37 (S)		
C3-Fluoranthenes/Pyrenes			51.2	0.686 (S)		
C4-Fluoranthenes/Pyrenes			20.3	3.49 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			41.7	1.58 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		4.24	1.66 (S)		1.066
1-Methylchrysene	3351-28-8		6.77	1.50 (S)		1.074
C2-Benzo[a]anthracenes/Chrysenes [4]			21.0	1.62 (S)		
5,9-Dimethylchrysene	139493-40-6		2.62	1.62 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.74 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			2.59	2.05 (S)		
C1-Benzofluoranthenes/Benzopyrenes			9.54	2.43 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.43 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.63 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		76.8	1.47 (S)	0.02	1.377
Anthracene d-10			1140	0.636 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		11100	3.15 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2730	3.66 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-08 19-JUL-24
Sample Collection:
19-Jul-2024 10:34

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-18
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 10:41:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0800.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1470	36.8	0.10	0.609
2-Methylnaphthalene d-10		4040	1820	44.9	0.19	0.756
Biphenyl d-10		4010	1970	49.1		0.868
2,6-Dimethylnaphthalene d-12		4020	2040	50.6	0.68	0.896
Acenaphthylene d-8		4020	2140	53.2	0.16	0.961
Dibenzothiophene d-8		4010	2150	53.6	0.08	0.792
Phenanthrene d-10		4010	2880	71.8	0.14	0.808
Benzo[a]anthracene d-12		4000	3570	89.3	0.22	1.164
Chrysene d-12		3220	2920	90.8	0.26	1.169
Benzo[b]fluoranthene d-12		3990	3560	89.2	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3450	88.3	0.18	0.961
Benzo[a]pyrene d-12		4010	3450	86.1	0.18	1.009
Perylene d-12		4000	3480	87.0	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3240	81.7	0.17	1.206
Benzo[ghi]perylene d-12		3980	3380	84.9	0.19	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-18_Form2_PH5H0800.D_SJ3566475.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-09 19-JUL-24
Sample Collection:
19-Jul-2024 11:36

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-19
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 11:31:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0801.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		137	2.26 (S)	0.07	1.006
Acenaphthylene	208-96-8	ND		3.68 (S)		
Acenaphthene	83-32-9		18.7	2.05 (S)	1.26	1.048
2-Methylfluorene	1430-97-3		16.1	4.36 (S)	1.33	0.939
C2 Phenanthrenes/Anthracenes			321	1.95 (S)		
Fluorene	86-73-7		18.0	3.45 (S)	0.85	0.844
Phenanthrene	85-01-8		125	2.17 (S)	0.20	1.003
Anthracene	120-12-7		5.07	2.14 (S)	0.17	1.011
C1 Phenanthrenes/Anthracenes			294	3.09 (S)		
Fluoranthene	206-44-0		58.7	0.494 (S)	0.21	1.204
Pyrene	129-00-0	NDR	91.3	0.481 (S)	0.72	1.240
Benz[a]anthracene [3]	56-55-3		3.31	1.87 (S)	0.29	1.003
Chrysene [4]	218-01-9		45.2	1.90 (S)	0.32	1.002
Benzo[b]fluoranthene	205-99-2		6.93	1.83 (S)	0.23	1.004
Benzo[j,k]fluoranthenes		ND		1.86 (S)		
Benzo[e]pyrene	192-97-2	NDR	18.5	2.56 (S)	2.30	0.996
Benzo[a]pyrene	50-32-8	ND		2.40 (S)		
Perylene	198-55-0		53.5	2.56 (S)	0.23	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.47 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		2.09 (S)		
Benzo[ghi]perylene	191-24-2		9.38	2.05 (S)	0.26	1.002
2-Methylnaphthalene	91-57-6		140	1.19 (S)	0.90	1.009
1-Methylnaphthalene	90-12-0		73.3	1.31 (S)	0.94	1.040
C1-Naphthalenes			213	1.19 (S)		
Biphenyl	92-52-4		10.5	4.04 (S)	0.30	1.005
C1-Biphenyls			17.8	1.57 (S)		
C2-Biphenyls			37.7	2.44 (S)		
C2-Naphthalenes			183	2.32 (S)		
1,2-Dimethylnaphthalene	573-98-8		11.4	2.32 (S)	1.13	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		32.7	1.76 (S)	0.63	1.011
C3-Naphthalenes			327	0.841 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		90.6	0.857 (S)	0.91	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		65.2	0.827 (S)	0.95	1.226
C4-Naphthalenes			287	1.67 (S)		
C1-Acenaphthenes		ND		2.10 (S)		
C1-Fluorenes			48.2	4.36 (S)		
1,7-Dimethylfluorene	442-66-0	ND		1.90 (S)		
C2-Fluorenes			143	1.90 (S)		
C3-Fluorenes			159	4.81 (S)		
Dibenzothiophene	132-65-0	NDR	8.05	2.02 (S)	0.12	1.003
C1-Dibenzothiophenes			45.7	1.83 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		22.8	1.83 (S)	0.61	1.097
C2-Dibenzothiophenes			115	1.42 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		9.32	1.42 (S)	0.48	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		16.8	1.14 (S)	0.16	1.153
C3-Dibenzothiophenes			102	4.31 (S)		
C4-Dibenzothiophenes			17.9	1.58 (S)		
3-Methylphenanthrene	832-71-3		51.1	3.15 (S)	0.57	1.088
2-Methylphenanthrene	2531-84-2		53.5	3.05 (S)	0.64	1.091
2-Methylanthracene	613-12-7	ND		3.33 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		105	3.15 (S)	0.59	1.106
1-Methylphenanthrene	832-69-9		84.6	3.09 (S)	0.70	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	19.5	1.90 (S)	1.05	1.164
2,6-Dimethylphenanthrene	17980-16-4	NDR	13.0	1.95 (S)	0.14	1.171
1,7-Dimethylphenanthrene	483-87-4		50.2	2.02 (S)	0.32	1.193
1,8-Dimethylphenanthrene	7372-87-4		18.9	1.95 (S)	0.40	1.209
C3-Phenanthrenes/Anthracenes			2060	3.09 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		8.27	3.09 (S)	0.50	1.292
Retene	483-65-8		356	3.64 (S)	1.51	1.301
C4-Phenanthrenes/Anthracenes			536	3.64 (S)		
C1-Fluoranthenes/Pyrenes			122	2.05 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		43.1	2.05 (S)	1.10	1.301
C2-Fluoranthenes/Pyrenes			83.3	0.864 (S)		
C3-Fluoranthenes/Pyrenes			36.4	1.54 (S)		
C4-Fluoranthenes/Pyrenes			16.5	3.20 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			32.2	1.00 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		3.07	1.05 (S)		1.066
1-Methylchrysene	3351-28-8		5.16	0.953 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			14.2	1.81 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		1.81 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		2.88 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		2.29 (S)		
C1-Benzofluoranthenes/Benzopyrenes			16.7	3.33 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		3.33 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		3.68 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		38.8	1.67 (S)	0.02	1.377
Anthracene d-10			1650	0.628 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		13300	2.17 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2680	3.04 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-19_Form1A_PH5H0801.D_SJ3566476.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-09 19-JUL-24
Sample Collection:
19-Jul-2024 11:36

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-19
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 11:31:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0801.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	2210	55.1	0.09	0.609
2-Methylnaphthalene d-10		4040	2640	65.3	0.19	0.756
Biphenyl d-10		4010	2790	69.5		0.868
2,6-Dimethylnaphthalene d-12		4020	2810	70.0	0.68	0.896
Acenaphthylene d-8		4020	2910	72.4	0.17	0.961
Dibenzothiophene d-8		4010	2600	64.7	0.08	0.792
Phenanthrene d-10		4010	3200	79.8	0.14	0.808
Benzo[a]anthracene d-12		4000	3560	89.1	0.22	1.164
Chrysene d-12		3220	2910	90.5	0.26	1.169
Benzo[b]fluoranthene d-12		3990	3580	89.8	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3540	90.5	0.18	0.961
Benzo[a]pyrene d-12		4010	3550	88.5	0.18	1.008
Perylene d-12		4000	3600	90.0	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3380	85.1	0.17	1.205
Benzo[ghi]perylene d-12		3980	3550	89.3	0.19	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-19_Form2_PH5H0801.D_SJ3566476.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Dup 1 20-JUL-24
Sample Collection:
20-Jul-2024 17:05

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-20
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 12:20:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0802.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0791.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		58.3	1.87 (S)	0.07	1.006
Acenaphthylene	208-96-8	ND		3.78 (S)		
Acenaphthene	83-32-9		31.3	2.86 (S)	1.12	1.047
2-Methylfluorene	1430-97-3		659	4.30 (S)	1.23	0.939
C2 Phenanthrenes/Anthracenes			21400	10.3 (S)		
Fluorene	86-73-7		159	1.08 (S)	1.08	0.843
Phenanthrene	85-01-8		1500	18.5 (S)	0.19	1.004
Anthracene	120-12-7	ND		18.5 (S)		
C1 Phenanthrenes/Anthracenes			12100	2.72 (S)		
Fluoranthene	206-44-0		110	8.00 (S)	0.19	1.204
Pyrene	129-00-0		359	7.79 (S)	0.17	1.241
Benz[a]anthracene [3]	56-55-3		29.7	1.75 (S)	0.29	1.002
Chrysene [4]	218-01-9		352	1.84 (S)	0.33	1.002
Benzo[b]fluoranthene	205-99-2		18.5	4.54 (S)	0.24	1.004
Benzo[j,k]fluoranthenes		ND		4.76 (S)		
Benzo[e]pyrene	192-97-2		61.1	6.46 (S)	0.26	0.996
Benzo[a]pyrene	50-32-8	ND		6.05 (S)		
Perylene	198-55-0		69.9	6.61 (S)	0.18	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.68 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.77 (S)		
Benzo[ghi]perylene	191-24-2		13.1	1.77 (S)	0.22	1.003
2-Methylnaphthalene	91-57-6		285	4.10 (S)	0.92	1.009
1-Methylnaphthalene	90-12-0		338	4.52 (S)	0.92	1.040
C1-Naphthalenes			623	4.10 (S)		
Biphenyl	92-52-4		56.1	0.770 (S)	0.30	1.005
C1-Biphenyls			212	3.24 (S)		
C2-Biphenyls			623	2.63 (S)		
C2-Naphthalenes			5760	3.04 (S)		
1,2-Dimethylnaphthalene	573-98-8		347	3.04 (S)	1.19	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		1030	2.31 (S)	0.66	1.011
C3-Naphthalenes			18200	2.13 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		5950	2.16 (S)	0.91	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		3430	2.09 (S)	1.01	1.225
C4-Naphthalenes			19700	6.19 (S)		
C1-Acenaphthenes			12.1	2.81 (S)		
C1-Fluorenes			2090	4.30 (S)		
1,7-Dimethylfluorene	442-66-0		2590	6.96 (S)	0.08	1.031
C2-Fluorenes			8900	6.96 (S)		
C3-Fluorenes			12400	10.3 (S)		
Dibenzothiophene	132-65-0	NDR	671	7.70 (S)	0.18	1.003
C1-Dibenzothiophenes			5910	1.98 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		1740	1.98 (S)	0.73	1.094
C2-Dibenzothiophenes			13700	4.86 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7		1280	4.86 (S)	0.51	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		2430	3.90 (S)	0.14	1.152
C3-Dibenzothiophenes			7100	9.00 (S)		
C4-Dibenzothiophenes			2360	4.23 (S)		
3-Methylphenanthrene	832-71-3		2330	2.78 (S)	0.60	1.087
2-Methylphenanthrene	2531-84-2		2680	2.69 (S)	0.58	1.092
2-Methylanthracene	613-12-7	ND		2.94 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		4360	2.78 (S)	0.58	1.106
1-Methylphenanthrene	832-69-9		2710	2.72 (S)	0.64	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	1180	10.0 (S)	0.83	1.165
2,6-Dimethylphenanthrene	17980-16-4		1240	10.3 (S)	0.38	1.171
1,7-Dimethylphenanthrene	483-87-4		3120	10.7 (S)	0.33	1.193
1,8-Dimethylphenanthrene	7372-87-4		825	10.3 (S)	0.38	1.209
C3-Phenanthrenes/Anthracenes			11900	10.6 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		526	10.6 (S)	0.57	1.292
Retene	483-65-8		587	17.1 (S)	1.42	1.302
C4-Phenanthrenes/Anthracenes			11200	17.1 (S)		
C1-Fluoranthenes/Pyrenes			1380	6.70 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		417	6.70 (S)	1.02	1.301
C2-Fluoranthenes/Pyrenes			1640	5.35 (S)		
C3-Fluoranthenes/Pyrenes			1100	3.70 (S)		
C4-Fluoranthenes/Pyrenes			526	5.38 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			564	1.73 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		64.2	1.82 (S)		1.065
1-Methylchrysene	3351-28-8		85.2	1.65 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			682	1.31 (S)		
5,9-Dimethylchrysene	139493-40-6		138	1.31 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			119	3.54 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			64.8	5.65 (S)		
C1-Benzofluoranthenes/Benzopyrenes			158	2.40 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		16.1	2.40 (S)		1.109
C2-Benzofluoranthenes/Benzopyrenes			81.0	4.15 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		2540	6.19 (S)	0.03	1.377
Anthracene d-10			522	3.19 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		6090	5.86 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		1780	4.53 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-20_Form1A_PH5H0802.D_SJ3566477.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Dup 1 20-JUL-24
Sample Collection:
20-Jul-2024 17:05

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-20
Sample Receipt Date:	20-Aug-2024	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	13-Feb-2025 **Time:** 12:20:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0802.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0791.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1450	36.2	0.09	0.609
2-Methylnaphthalene d-10		4040	1790	44.4	0.19	0.756
Biphenyl d-10		4010	2000	49.9		0.868
2,6-Dimethylnaphthalene d-12		4020	2090	51.9	0.67	0.896
Acenaphthylene d-8		4020	2250	55.8	0.16	0.961
Dibenzothiophene d-8		4010	2520	62.9	0.08	0.792
Phenanthrene d-10		4010	2910	72.6	0.14	0.808
Benzo[a]anthracene d-12		4000	3560	89.1	0.22	1.164
Chrysene d-12		3220	2870	89.3	0.26	1.170
Benzo[b]fluoranthene d-12		3990	3580	89.6	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3420	87.4	0.18	0.961
Benzo[a]pyrene d-12		4010	3480	86.8	0.18	1.009
Perylene d-12		4000	3500	87.5	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3470	87.5	0.17	1.206
Benzo[ghi]perylene d-12		3980	3530	88.8	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: PAH_PAH_LO_LPAHF_L41307-20_Form2_PH5H0802.D_SJ3566477.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	N/A
Matrix:	SOLVENT	**Lab Sample I.D.:**	WG92745-101
Sample Receipt Date:	N/A	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 19:55:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0781.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
		Cal. Ver. Data Filename:	PH5H0776.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3	NDR	3.52	1.17 (S)	0.11	1.006
Acenaphthylene	208-96-8	ND		1.22 (S)		
Acenaphthene	83-32-9	ND		2.46 (S)		
2-Methylfluorene	1430-97-3	ND		2.59 (S)		
C2 Phenanthrenes/Anthracenes		ND		3.45 (S)		
Fluorene	86-73-7	ND		3.56 (S)		
Phenanthrene	85-01-8	ND		3.88 (S)		
Anthracene	120-12-7	ND		3.83 (S)		
C1 Phenanthrenes/Anthracenes		ND		1.08 (S)		
Fluoranthene	206-44-0	ND		2.28 (S)		
Pyrene	129-00-0	NDR	2.50	2.22 (S)	0.06	1.238
Benz[a]anthracene [3]	56-55-3	ND		0.888 (S)		
Chrysene [4]	218-01-9	ND		0.791 (S)		
Benzo[b]fluoranthene	205-99-2	ND		0.615 (S)		
Benzo[j,k]fluoranthenes		ND		0.682 (S)		
Benzo[e]pyrene	192-97-2	ND		0.980 (S)		
Benzo[a]pyrene	50-32-8	ND		0.919 (S)		
Perylene	198-55-0	ND		1.00 (S)		
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.743 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.71 (S)		
Benzo[ghi]perylene	191-24-2	ND		1.13 (S)		
2-Methylnaphthalene	91-57-6		2.76	1.00 (S)	0.89	1.009
1-Methylnaphthalene	90-12-0	NDR	1.20	1.11 (S)	1.82	1.040
C1-Naphthalenes			2.76	1.00 (S)		
Biphenyl	92-52-4	ND		2.07 (S)		
C1-Biphenyls		ND		1.47 (S)		
C2-Biphenyls			3.59	2.30 (S)		
C2-Naphthalenes			14.9	2.68 (S)		
1,2-Dimethylnaphthalene	573-98-8	ND		2.68 (S)		

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0	ND		2.04 (S)		
C3-Naphthalenes		ND		3.08 (S)		
2,3,6-Trimethylnaphthalene	829-26-5	ND		3.13 (S)		
2,3,5-Trimethylnaphthalene	2245-38-7	ND		3.02 (S)		
C4-Naphthalenes		ND		1.05 (S)		
C1-Acenaphthenes		ND		0.997 (S)		
C1-Fluorenes		ND		2.59 (S)		
1,7-Dimethylfluorene	442-66-0	ND		2.06 (S)		
C2-Fluorenes		ND		2.06 (S)		
C3-Fluorenes		ND		3.98 (S)		
Dibenzothiophene	132-65-0	ND		1.06 (S)		
C1-Dibenzothiophenes		ND		1.41 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	ND		1.41 (S)		
C2-Dibenzothiophenes		ND		1.46 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	ND		1.46 (S)		
4,6-Dimethyldibenzothiophene	1207-12-1	ND		1.17 (S)		
C3-Dibenzothiophenes		ND		3.05 (S)		
C4-Dibenzothiophenes		ND		3.71 (S)		
3-Methylphenanthrene	832-71-3	NDR	1.62	1.10 (S)	1.16	1.088
2-Methylphenanthrene	2531-84-2	ND		1.07 (S)		
2-Methylanthracene	613-12-7	ND		1.16 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4	ND		1.10 (S)		
1-Methylphenanthrene	832-69-9	NDR	1.43	1.08 (S)	0.18	1.109
3,6-Dimethylphenanthrene	1576-67-6	ND		3.35 (S)		
2,6-Dimethylphenanthrene	17980-16-4	ND		3.45 (S)		
1,7-Dimethylphenanthrene	483-87-4	ND		3.56 (S)		
1,8-Dimethylphenanthrene	7372-87-4	ND		3.45 (S)		
C3-Phenanthrenes/Anthracenes		ND		2.40 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6	ND		2.40 (S)		
Retene	483-65-8	ND		3.96 (S)		
C4-Phenanthrenes/Anthracenes			6.37	3.96 (S)		
C1-Fluoranthenes/Pyrenes		ND		1.55 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	ND		1.55 (S)		
C2-Fluoranthenes/Pyrenes		ND		1.84 (S)		
C3-Fluoranthenes/Pyrenes		ND		1.07 (S)		
C4-Fluoranthenes/Pyrenes		ND		1.84 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			0.908	0.850 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7	ND		0.894 (S)		
1-Methylchrysene	3351-28-8	ND		0.810 (S)		
C2-Benzo[a]anthracenes/Chrysenes [4]		ND		2.16 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		2.16 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.39 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		2.74 (S)		
C1-Benzofluoranthenes/Benzopyrenes		ND		2.53 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.53 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		2.46 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	ND		1.05 (S)		
Anthracene d-10		NDR	19.3	0.733 (S)	0.39	1.008
Fluoranthene d-10	93951-69-0	NDR	4.51	0.992 (S)	0.41	0.835
Dibenzo[a,h]anthracene d-14	13250-98-1	ND		2.47 (S)		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Brian Watson_____

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	N/A
Matrix:	SOLVENT	**Lab Sample I.D.:**	WG92745-101
Sample Receipt Date:	N/A	**Sample Size:**	1 sample
Extraction Date:	22-Jan-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	12-Feb-2025 **Time:** 19:55:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H0781.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H0781.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H0776.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1640	41.0	0.10	0.610
2-Methylnaphthalene d-10		4040	1750	43.3	0.19	0.756
Biphenyl d-10		4010	1750	43.6		0.868
2,6-Dimethylnaphthalene d-12		4020	1710	42.5	0.69	0.896
Acenaphthylene d-8		4020	1680	41.7	0.16	0.961
Dibenzothiophene d-8		4010	1510	37.8	0.08	0.792
Phenanthrene d-10		4010	1780	44.4	0.14	0.808
Benzo[a]anthracene d-12		4000	3110	77.7	0.22	1.164
Chrysene d-12		3220	2870	89.2	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3120	78.3	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3090	79.1	0.18	0.961
Benzo[a]pyrene d-12		4010	2900	72.4	0.18	1.008
Perylene d-12		4000	2880	72.0	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	2360	59.5	0.17	1.206
Benzo[ghi]perylene d-12		3980	2830	71.1	0.18	1.237

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

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Report Filename: PAH_PAH_LO_LPAHF_WG92745-101_Form2_PH5H0781.D_SJ3566460.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 8A

POLYAROMATIC HYDROCARBON ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4608 **OPR Data Filename:** **PH5H0778.D**

Matrix: SOLVENT **Lab Sample I.D.:** WG92745-102

Extraction Date: 22-Jan-2025 **Analysis Date:** 12-Feb-2025 **Time:** 17:26:00

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON 100 uL EXTRACT.

COMPOUND	CAS NO.	LAB FLAG [1]	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
Naphthalene	91-20-3		0.07	39500	39200	27700 - 51400	99.1
Acenaphthylene	208-96-8		0.20	39700	38200	27800 - 55600	96.1
Acenaphthene	83-32-9		1.13	39700	39800	27800 - 51600	100
2-Methylfluorene	1430-97-3		1.20	40000	38200	20000 - 60000	95.6
Fluorene	86-73-7		0.97	39700	36100	23800 - 55600	91.0
Phenanthrene	85-01-8		0.19	40400	40000	28300 - 52600	98.9
Anthracene	120-12-7		0.18	40100	40200	28100 - 52100	100
Fluoranthene	206-44-0	N	0.20	39400	55400	27600 - 51300	141
Pyrene	129-00-0	N	0.20	39600	56900	27700 - 51500	144
Benz[a]anthracene	56-55-3		0.26	40200	39800	28100 - 52300	99.0
Chrysene	218-01-9		0.29	40400	39300	28300 - 52500	97.4
Benzo[b]fluoranthene	205-99-2		0.22	40000	38400	28000 - 52100	96.0
Benzo[j,k]fluoranthenes			0.22	40300	39400	28200 - 52400	97.9
Benzo[e]pyrene	192-97-2		0.22	40000	42200	28000 - 52000	105
Benzo[a]pyrene	50-32-8		0.21	40200	39500	28100 - 52200	98.4
Perylene	198-55-0		0.22	40000	39600	28000 - 52000	99.1
Dibenz[a,h]anthracene	53-70-3		0.15	40400	37200	28300 - 52500	92.1
Indeno[1,2,3-cd]pyrene	193-39-5		0.20	40400	38800	28300 - 52500	96.0
Benzo[ghi]perylene	191-24-2		0.22	40100	38800	28100 - 52100	96.7
2-Methylnaphthalene	91-57-6		0.90	40000	39300	28000 - 52000	98.2
1-Methylnaphthalene	90-12-0		0.92	40100	40100	28000 - 52100	100
Biphenyl	92-52-4		0.28	39800	39100	27900 - 51800	98.2
1,2-Dimethylnaphthalene	573-98-8		1.24	39900	40100	23900 - 55900	101
2,6-Dimethylnaphthalene	581-42-0		0.66	40100	39700	28100 - 52200	99.0
2,3,6-Trimethylnaphthalene	829-26-5		0.86	39900	39900	20000 - 59900	100
2,3,5-Trimethylnaphthalene	2245-38-7		0.86	40000	40500	20000 - 60100	101
1,7-Dimethylfluorene	442-66-0		0.08	39800	45200	19900 - 59700	114
Dibenzothiophene	132-65-0		0.08	40000	39100	24000 - 55900	97.8
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		0.70	40200	42600	20100 - 60200	106
4,6-Dimethyldibenzothiophene	1207-12-1		0.15	40000	51900	20000 - 59900	130
2-Methylphenanthrene	2531-84-2		0.58	39800	46500	19900 - 59700	117
2-Methylanthracene	613-12-7		0.50	40000	46800	20000 - 60000	117
1-Methylphenanthrene	832-69-9		0.60	40000	49900	20000 - 60100	125
3,6-Dimethylphenanthrene	1576-67-6		0.34	40200	54500	20100 - 60200	136
1,7-Dimethylphenanthrene	483-87-4		0.32	39000	55400	19500 - 58500	142

COMPOUND	CAS NO.	LAB FLAG [1]	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
1,2,6-Trimethylphenanthrene	30436-55-6	N	0.56	40000	62000	20000 - 60000	155
Retene	483-65-8	N	1.53	40000	63900	20000 - 60000	160
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	N	1.04	40300	63300	20100 - 60400	157
5/6-Methylchrysene	3697-24-3/1705-85-7			40000	39700	20000 - 60100	99.1
1-Methylchrysene	3351-28-8			39900	39800	19900 - 59800	99.6
5,9-Dimethylchrysene	139493-40-6			40200	40200	20100 - 60200	100
7-Methylbenzo[a]pyrene	63041-77-0			40000	38600	20000 - 59900	96.7
1,4,6,7-Tetramethylnaphthalene	13764-18-6		0.03	39900	41800	19900 - 79800	105
Anthracene d-10			0.13	39800	39200	27900 - 51800	98.5
Fluoranthene d-10	93951-69-0		0.16	39700	35000	27800 - 51600	88.1
Dibenzo[a,h]anthracene d-14	13250-98-1		0.24	38300	38300	26800 - 49800	100

(1) Where applicable, custom lab flags have been used on this report; N = authentic recovery in the OPR is not within method/contract control limits.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: PAH_PAH_LO_LPAHF_WG92745-102_Form8A_SJ3566457.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 8B

POLYAROMATIC HYDROCARBON ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4608 **OPR Data Filename:** **PH5H0778.D**

Matrix: SOLVENT **Lab Sample I.D.:** WG92745-102

Extraction Date: 22-Jan-2025 **Analysis Date:** 12-Feb-2025 **Time:** 17:26:00

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON 100 uL EXTRACT.

LABELED COMPOUND	CAS NO.	LAB FLAG [1]	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
Naphthalene d-8	1146-65-2		0.09	40100	17900	6020-52100	44.6
2-Methylnaphthalene d-10	7297-45-2		0.19	40400	19100	8080-52500	47.2
Biphenyl d-10	1486-01-7			40100	19100	6020-52100	47.7
2,6-Dimethylnaphthalene d-12	350820-12-1		0.68	40200	19100	8040-52300	47.4
Acenaphthylene d-8	93951-97-4		0.16	40200	19100	8040-52300	47.5
Dibenzothiophene d-8	33262-29-2		0.08	40100	18600	12000-52100	46.4
Phenanthrene d-10	1517-22-2		0.14	40100	21500	12000-52100	53.6
Benzo[a]anthracene d-12	1718-53-2		0.22	40000	34400	12000-52000	86.1
Chrysene d-12	1719-03-5		0.26	32200	29200	9650-41800	90.9
Benzo[b]fluoranthene d-12	93951-98-5		0.19	39900	35300	12000-51900	88.5
Benzo[k]fluoranthene d-12	93952-01-3		0.18	39100	34700	11700-50800	88.7
Benzo[a]pyrene d-12	63466-71-7		0.19	40100	34200	12000-52100	85.2
Perylene d-12	1520-96-3		0.23	40000	34000	12000-52000	84.9
Indeno[1,2,3-cd]pyrene d-12	203578-33-0		0.17	39700	32700	11900-51600	82.3
Benzo[ghi]perylene d-12	93951-66-7		0.19	39800	34400	11900-51700	86.3

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Brian Watson

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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Report Filename: PAH_PAH_LO_LPAHF_WG92745-102_Form8B_SJ3566457.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 3A

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

		RELATIVE RESPONSE (RR)								
COMPOUND	**LAB FLAG 1**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**MEAN RR**	**CV (%RSD)[2]**
Naphthalene			1.15	1.19	1.23	1.22	1.22		1.20	2.93
Acenaphthylene			1.19	1.24	1.27	1.26	1.26		1.24	2.76
Acenaphthene			0.66	0.69	0.71	0.71	0.71		0.69	2.93
2-Methylfluorene			0.52	0.54	0.55	0.57	0.57		0.55	4.03
Fluorene			0.75	0.80	0.82	0.82	0.82		0.80	3.66
Phenanthrene			1.15	1.21	1.25	1.22	1.21		1.21	2.99
Anthracene			1.16	1.22	1.24	1.24	1.25		1.22	3.07
Fluoranthene			1.25	1.30	1.38	1.33	1.34		1.32	3.60
Pyrene			1.29	1.35	1.41	1.37	1.37		1.36	3.25
Benz[a]anthracene			1.09	1.15	1.15	1.18	1.16		1.15	3.01
Chrysene			1.06	1.09	1.13	1.13	1.11		1.10	2.48
Benzo[b]fluoranthene			1.32	1.31	1.32	1.29	1.29		1.31	1.08
Benzo[j,k]fluoranthenes			1.15	1.18	1.23	1.23	1.23		1.20	2.88
Benzo[e]pyrene			1.02	1.08	1.16	1.15	1.15		1.11	5.45
Benzo[a]pyrene			1.13	1.17	1.20	1.21	1.22		1.18	3.13
Perylene			1.03	1.07	1.13	1.14	1.15		1.10	4.44
Dibenz[a,h]anthracene			1.09	1.15	1.20	1.20	1.20		1.17	4.24
Indeno[1,2,3-cd]pyrene			1.15	1.15	1.19	1.17	1.17		1.16	1.36
Benzo[ghi]perylene			1.17	1.22	1.26	1.26	1.25		1.23	3.02
2-Methylnaphthalene			1.15	1.20	1.24	1.22	1.23		1.21	3.10
1-Methylnaphthalene			1.05	1.09	1.11	1.11	1.12		1.09	2.52
Biphenyl			1.06	1.10	1.12	1.12	1.12		1.10	2.37
C1-Biphenyls			1.06	1.10	1.12	1.12	1.12		1.10	2.37
C2-Biphenyls			1.06	1.10	1.12	1.12	1.12		1.10	2.37
1,2-Dimethylnaphthalene			0.85	0.86	0.88	0.89	0.89		0.87	2.08
2,6-Dimethylnaphthalene			1.09	1.14	1.18	1.17	1.18		1.15	3.17
C3-Naphthalenes			1.05	1.09	1.12	1.13	1.14		1.10	3.18
2,3,6-Trimethylnaphthalene			1.04	1.07	1.10	1.11	1.11		1.09	2.91
2,3,5-Trimethylnaphthalene			1.07	1.10	1.15	1.15	1.16		1.12	3.45
C4-Naphthalenes			1.01	1.05	1.09	1.11	1.12		1.08	4.03
C1-Acenaphthenes			0.66	0.69	0.71	0.71	0.71		0.69	2.93
C1-Fluorenes			0.52	0.54	0.55	0.57	0.57		0.55	4.03
1,7-Dimethylfluorene			0.52	0.53	0.54	0.55	0.55		0.54	2.37
C2-Fluorenes			0.52	0.53	0.54	0.55	0.55		0.54	2.37
C3-Fluorenes			0.52	0.53	0.54	0.55	0.55		0.54	2.37
Dibenzothiophene			1.11	1.16	1.19	1.17	1.15		1.16	2.71
2/3-Methyldibenzothiophenes			0.84	0.85	0.90	0.88	0.87		0.87	2.66
C2-Dibenzothiophenes			0.59	0.60	0.62	0.64	0.64		0.62	3.09

COMPOUND	LAB FLAG [1]	RELATIVE RESPONSE (RR) CS0	CS1	CS2	CS3	CS4	CS5	CS6	MEAN RR	CV (%RSD)[2]
2,4-Dimethyldibenzothiophene			0.59	0.60	0.62	0.64	0.64		0.62	3.09
4,6-Dimethyldibenzothiophene			0.74	0.76	0.79	0.78	0.78		0.77	2.81
C3-Dibenzothiophenes			0.59	0.60	0.62	0.64	0.64		0.62	3.09
C4-Dibenzothiophenes			0.59	0.60	0.62	0.64	0.64		0.62	3.09
3-Methylphenanthrene			0.81	0.85	0.89	0.88	0.89		0.86	3.96
2-Methylphenanthrene			0.84	0.88	0.92	0.91	0.90		0.89	3.34
2-Methylanthracene			0.76	0.80	0.84	0.84	0.85		0.82	4.69
9/4-Methylphenanthrene			0.81	0.85	0.89	0.88	0.89		0.86	3.96
1-Methylphenanthrene			0.82	0.88	0.91	0.90	0.90		0.88	4.02
3,6-Dimethylphenanthrene			0.71	0.75	0.78	0.77	0.78		0.76	3.77
2,6-Dimethylphenanthrene			0.69	0.72	0.75	0.75	0.76		0.74	3.86
1,7-Dimethylphenanthrene			0.67	0.70	0.73	0.73	0.74		0.71	4.11
1,8-Dimethylphenanthrene			0.69	0.72	0.75	0.75	0.76		0.74	3.86
C3-Phenanthrenes/Anthracenes			0.66	0.72	0.74	0.75	0.76		0.73	5.44
1,2,6-Trimethylphenanthrene			0.66	0.72	0.74	0.75	0.76		0.73	5.44
Retene			0.25	0.28	0.28	0.29	0.30		0.28	6.79
C4-Phenanthrenes/Anthracenes			0.25	0.28	0.28	0.29	0.30		0.28	6.79
3-Methylfluoranthene/Benzo[a]fluorene			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C2-Fluoranthenes/Pyrenes			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C3-Fluoranthenes/Pyrenes			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C4-Fluoranthenes/Pyrenes			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C1-Benzo[a]anthracenes/Chrysenes			0.77	0.79	0.82	0.82	0.84		0.81	3.30
5/6-Methylchrysene			0.73	0.76	0.78	0.78	0.79		0.77	3.34
1-Methylchrysene			0.81	0.83	0.86	0.87	0.88		0.85	3.37
C2-Benzo[a]anthracenes/Chrysenes			0.64	0.67	0.69	0.70	0.72		0.68	4.32
5,9-Dimethylchrysene			0.64	0.67	0.69	0.70	0.72		0.68	4.32
C3-Benzo[a]anthracenes/Chrysenes			0.64	0.67	0.69	0.70	0.72		0.68	4.32
C4-Benzo[a]anthracenes/Chrysenes			0.64	0.67	0.69	0.70	0.72		0.68	4.32
C1-Benzofluoranthenes/Benzopyrenes			0.82	0.85	0.90	0.91	0.94		0.88	5.24
7-Methylbenzo[a]pyrene			0.82	0.85	0.90	0.91	0.94		0.88	5.24
C2-Benzofluoranthenes/Benzopyrenes			0.82	0.85	0.90	0.91	0.94		0.88	5.24
1,4,6,7-Tetramethylnaphthalene			1.01	1.05	1.09	1.11	1.12		1.08	4.03
Anthracene d-10			1.07	1.09	1.08	1.09	1.09		1.08	0.61
Fluoranthene d-10			1.02	1.02	1.01	1.03	1.04		1.03	0.86
Dibenzo[a,h]anthracene d-14			0.93	0.94	0.95	0.96	0.96		0.95	1.30

(1) Where applicable, custom lab flags have been used on this report.
(2) QC limit is 20% for native compounds with a labeled analog, 35% for those without a labeled analog.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Simin Yassari

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Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3A_GS113872.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 3B

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

		RELATIVE RESPONSE (RR)								
LABELED COMPOUND	**LAB FLAG [1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**MEAN RR**	**CV (%RSD)[2]**
Naphthalene d-8			1.62	1.62	1.61	1.60	1.60		1.61	0.57
2-Methylnaphthalene d-10			1.07	1.06	1.06	1.06	1.06		1.06	0.49
Biphenyl d-10			1.41	1.41	1.41	1.40	1.40		1.40	0.27
2,6-Dimethylnaphthalene d-12			1.01	1.00	1.00	1.00	1.00		1.00	0.44
Acenaphthylene d-8			1.71	1.71	1.71	1.69	1.71		1.70	0.42
Dibenzothiophene d-8			0.91	0.90	0.89	0.91	0.90		0.90	1.03
Phenanthrene d-10			0.90	0.89	0.88	0.89	0.88		0.89	0.80
Benzo[a]anthracene d-12			0.99	0.99	0.99	0.99	0.99		0.99	0.22
Chrysene d-12			1.00	1.01	1.01	1.01	1.02		1.01	0.70
Benzo[b]fluoranthene d-12			1.00	0.99	0.99	1.01	1.01		1.00	0.88
Benzo[k]fluoranthene d-12			1.06	1.07	1.06	1.07	1.08		1.07	0.93
Benzo[a]pyrene d-12			1.02	1.02	1.02	1.04	1.05		1.03	1.14
Perylene d-12			1.04	1.04	1.04	1.05	1.06		1.04	0.79
Indeno[1,2,3-cd]pyrene d-12			1.12	1.12	1.13	1.14	1.16		1.13	1.36
Benzo[ghi]perylene d-12			1.04	1.04	1.05	1.06	1.07		1.05	1.23

(1) Where applicable, custom lab flags have been used on this report.
(2) QC limit is 35% for labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Simin Yassari_____

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Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3B_GS113872.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 3C

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

COMPOUND	LAB FLAG [1]	M/Z's FORMING RATIO	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6
Naphthalene		**128,102**		0.07	0.06	0.07	0.07	0.07	
Acenaphthylene		**152,151**		0.21	0.19	0.20	0.20	0.20	
Acenaphthene		**154,153**		1.14	1.14	1.13	1.13	1.12	
2-Methylfluorene		**180,165**		1.20	1.20	1.21	1.19	1.19	
Fluorene		**166,165**		0.98	0.97	0.97	0.97	0.97	
Phenanthrene		**178,176**		0.19	0.19	0.18	0.19	0.19	
Anthracene		**178,176**		0.19	0.18	0.18	0.18	0.18	
Fluoranthene		**202,200**		0.21	0.20	0.19	0.20	0.20	
Pyrene		**202,200**		0.21	0.21	0.20	0.20	0.21	
Benz[a]anthracene		**228,226**		0.28	0.27	0.27	0.26	0.26	
Chrysene		**228,226**		0.28	0.29	0.29	0.29	0.29	
Benzo[b]fluoranthene		**252,253**		0.25	0.23	0.22	0.22	0.22	
Benzo[j,k]fluoranthenes		**252,253**		0.23	0.23	0.21	0.22	0.22	
Benzo[e]pyrene		**252,253**		0.21	0.23	0.21	0.22	0.22	
Benzo[a]pyrene		**252,253**		0.22	0.22	0.22	0.21	0.22	
Perylene		**252,253**		0.20	0.22	0.22	0.22	0.22	
Dibenz[a,h]anthracene		**278,139**		0.16	0.15	0.14	0.15	0.15	
Indeno[1,2,3-cd]pyrene		**276,138**		0.24	0.21	0.19	0.19	0.20	
Benzo[ghi]perylene		**276,138**		0.21	0.21	0.20	0.20	0.21	
2-Methylnaphthalene		**142,141**		0.89	0.91	0.89	0.89	0.89	
1-Methylnaphthalene		**142,141**		0.90	0.93	0.93	0.92	0.92	
Biphenyl		**154,152**		0.28	0.28	0.27	0.28	0.28	
1,2-Dimethylnaphthalene		**156,141**		1.17	1.21	1.25	1.24	1.24	
2,6-Dimethylnaphthalene		**156,141**		0.66	0.66	0.65	0.66	0.66	
2,3,6-Trimethylnaphthalene		**170,155**		0.86	0.86	0.86	0.86	0.86	
2,3,5-Trimethylnaphthalene		**170,155**		0.86	0.85	0.85	0.86	0.85	
1,7-Dimethylfluorene		**194,177**		0.08	0.08	0.08	0.08	0.07	
Dibenzothiophene		**184,152**		0.08	0.08	0.08	0.08	0.08	
2/3-Methyldibenzothiophenes		**198,197**		0.71	0.72	0.70	0.70	0.70	
2,4-Dimethyldibenzothiophene		**212,197**		0.52	0.51	0.49	0.49	0.49	
4,6-Dimethyldibenzothiophene		**212,197**		0.17	0.17	0.15	0.15	0.15	
3-Methylphenanthrene		**192,191**							
2-Methylphenanthrene		**192,191**		0.59	0.58	0.57	0.57	0.58	
2-Methylanthracene		**192,191**		0.50	0.50	0.49	0.50	0.49	
9/4-Methylphenanthrene		**192,191**							
1-Methylphenanthrene		**192,191**		0.62	0.58	0.59	0.59	0.59	
3,6-Dimethylphenanthrene		**206,191**		0.35	0.33	0.33	0.33	0.34	
2,6-Dimethylphenanthrene		**206,191**							
1,7-Dimethylphenanthrene		**206,191**		0.33	0.32	0.31	0.31	0.32	

COMPOUND	LAB FLAG [1]	M/Z's FORMING RATIO	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6
1,8-Dimethylphenanthrene		**206,191**							
1,2,6-Trimethylphenanthrene		**220,205**		0.56	0.56	0.56	0.55	0.55	
Retene		**234,219**		1.61	1.47	1.55	1.52	1.52	
3-Methylfluoranthene/Benzo[a]fluorene		**216,215**		1.05	1.04	1.05	1.05	1.05	
5/6-Methylchrysene		**242**							
1-Methylchrysene		**242**							
5,9-Dimethylchrysene		**256**							
7-Methylbenzo[a]pyrene		**266**							
1,4,6,7-Tetramethylnaphthalene		**184,139**		0.03	0.03	0.03	0.03	0.03	
Anthracene d-10		**188,184**		0.13	0.13	0.13	0.13	0.13	
Fluoranthene d-10		**212,208**		0.16	0.16	0.16	0.16	0.16	
Dibenzo[a,h]anthracene d-14		**292,288**		0.23	0.22	0.23	0.22	0.23	

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Simin Yassari_____

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Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3C_GS113872.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 3D

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

LABELED COMPOUND	LAB FLAG[1]	M/Z's FORMING RATIO	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6
Naphthalene d-8		**136,134**		0.09	0.09	0.09	0.09	0.09	
2-Methylnaphthalene d-10		**152,151**		0.19	0.19	0.19	0.19	0.19	
Biphenyl d-10		**164**							
2,6-Dimethylnaphthalene d-12		**168,150**		0.67	0.67	0.67	0.68	0.67	
Acenaphthylene d-8		**160,158**		0.16	0.16	0.16	0.16	0.16	
Dibenzothiophene d-8		**192,160**		0.08	0.08	0.08	0.08	0.08	
Phenanthrene d-10		**188,184**		0.14	0.14	0.14	0.14	0.14	
Benzo[a]anthracene d-12		**240,236**		0.22	0.22	0.22	0.22	0.22	
Chrysene d-12		**240,236**		0.25	0.25	0.25	0.25	0.25	
Benzo[b]fluoranthene d-12		**264,260**		0.19	0.19	0.19	0.19	0.19	
Benzo[k]fluoranthene d-12		**264,260**		0.18	0.18	0.18	0.18	0.18	
Benzo[a]pyrene d-12		**264,260**		0.19	0.19	0.19	0.19	0.19	
Perylene d-12		**264,260**		0.23	0.23	0.23	0.23	0.23	
Indeno[1,2,3-cd]pyrene d-12		**288,284**		0.17	0.17	0.17	0.17	0.17	
Benzo[ghi]perylene d-12		**288,284**		0.19	0.19	0.19	0.19	0.19	

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Simin Yassari

For Axys Internal Use Only [XSL Template: Form3D.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3D_GS113872.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4A

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025 **VER Data Filename:** PH5H0776.D

Instrument ID: LR GC/MS **Analysis Date:** 12-Feb-2025

GC Column ID: RTX5 **Analysis Time:** 15:48:00

COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene	91-20-3		128,102	0.07	0.06-0.08	2000	1480-2470
Acenaphthylene	208-96-8		152,151	0.20	0.16-0.24	1990	1490-2480
Acenaphthene	83-32-9		154,153	1.13	0.90-1.36	2040	1490-2480
2-Methylfluorene	1430-97-3		180,165	1.20	0.96-1.44	2070	1500-2500
Fluorene	86-73-7		166,165	0.98	0.78-1.18	2070	1490-2480
Phenanthrene	85-01-8		178,176	0.19	0.15-0.23	2050	1520-2530
Anthracene	120-12-7		178,176	0.18	0.14-0.22	2010	1500-2510
Fluoranthene	206-44-0		202,200	0.20	0.16-0.24	2030	1480-2470
Pyrene	129-00-0		202,200	0.20	0.16-0.24	2070	1490-2480
Benz[a]anthracene	56-55-3		228,226	0.26	0.21-0.31	2040	1510-2510
Chrysene	218-01-9		228,226	0.29	0.23-0.35	2030	1510-2520
Benzo[b]fluoranthene	205-99-2		252,253	0.22	0.18-0.26	1960	1500-2500
Benzo[j,k]fluoranthenes			252,253	0.22	0.18-0.26	2070	1510-2520
Benzo[e]pyrene	192-97-2		252,253	0.22	0.18-0.26	2130	1500-2500
Benzo[a]pyrene	50-32-8		252,253	0.21	0.17-0.25	2050	1510-2510
Perylene	198-55-0		252,253	0.22	0.18-0.26	2060	1500-2500
Dibenz[a,h]anthracene	53-70-3		278,139	0.15	0.10-0.20	1930	1510-2520
Indeno[1,2,3-cd]pyrene	193-39-5		276,138	0.20	0.13-0.27	1970	1520-2530
Benzo[ghi]perylene	191-24-2		276,138	0.21	0.14-0.28	1990	1500-2510
2-Methylnaphthalene	91-57-6		142,141	0.89	0.71-1.07	2040	1500-2500
1-Methylnaphthalene	90-12-0		142,141	0.92	0.74-1.10	2040	1500-2500
Biphenyl	92-52-4		154,152	0.28	0.22-0.34	2010	1490-2490
1,2-Dimethylnaphthalene	573-98-8		156,141	1.24	0.99-1.49	2040	1500-2490
2,6-Dimethylnaphthalene	581-42-0		156,141	0.66	0.53-0.79	2060	1510-2510
2,3,6-Trimethylnaphthalene	829-26-5		170,155	0.87	0.70-1.04	2020	1500-2490
2,3,5-Trimethylnaphthalene	2245-38-7		170,155	0.86	0.69-1.03	2040	1500-2500
1,7-Dimethylfluorene	442-66-0		194,177	0.07	0.06-0.08	2030	1490-2490
Dibenzothiophene	132-65-0		184,152	0.08	0.06-0.10	2030	1500-2500
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		198,197	0.70	0.56-0.84	2040	1510-2510
2,4-Dimethyldibenzothiophene	31317-18-7		212,197	0.49	0.39-0.59	2090	1500-2500
4,6-Dimethyldibenzothiophene	1207-12-1		212,197	0.15	0.12-0.18	2040	1500-2500
2-Methylphenanthrene	2531-84-2		192,191	0.58	0.46-0.70	2030	1490-2490
2-Methylanthracene	613-12-7		192,191	0.50	0.40-0.60	2020	1500-2500
1-Methylphenanthrene	832-69-9		192,191	0.60	0.48-0.72	2080	1500-2500
3,6-Dimethylphenanthrene	1576-67-6		206,191	0.34	0.27-0.41	2090	1510-2510
1,7-Dimethylphenanthrene	483-87-4		206,191	0.32	0.26-0.38	2010	1460-2440
1,2,6-Trimethylphenanthrene	30436-55-6		220,205	0.56	0.45-0.67	2040	1500-2500
Retene	483-65-8		234,219	1.51	1.21-1.81	2130	1500-2500
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		216,215	1.05	0.84-1.26	2130	1510-2520
5/6-Methylchrysene	3697-24-3/1705-85-7		242	0	N/A	2030	1500-2500
1-Methylchrysene	3351-28-8		242	0	N/A	2030	1500-2490
5,9-Dimethylchrysene	139493-40-6		256	0	N/A	2060	1510-2510
7-Methylbenzo[a]pyrene	63041-77-0		266	0	N/A	2030	1500-2500
1,4,6,7-Tetramethylnaphthalene	13764-18-6		184,139	0.03	0.02-0.04	2020	1500-2490
Anthracene d-10			188,184	0.13	0.10-0.16	1960	1490-2490
Fluoranthene d-10	93951-69-0		212,208	0.16	0.13-0.19	1990	1490-2490

Dibenzo[a,h]anthracene d-14	13250-98-1	292,288	0.24	0.16-0.32	1940	1440-2400

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Bjorn Arvi

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Report Filename: GENERIC-SPECS_PAH_LO_PH5H0776.D__Form4A_SJ3563536.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4B

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H0776.D
Instrument ID:	LR GC/MS	**Analysis Date:**	12-Feb-2025
GC Column ID:	RTX5	**Analysis Time:**	15:48:00

LABELED COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene d-8	1146-65-2		136,134	0.09	0.07-0.11	2040	1500-2510
2-Methylnaphthalene d-10	7297-45-2		152,151	0.19	0.15-0.23	2030	1520-2530
Biphenyl d-10	1486-01-7		164	0	N/A	2010	1500-2510
2,6-Dimethylnaphthalene d-12	350820-12-1		168,150	0.68	0.54-0.82	2000	1510-2510
Acenaphthylene d-8	93951-97-4		160,158	0.16	0.13-0.19	1990	1510-2510
Dibenzothiophene d-8	33262-29-2		192,160	0.08	0.06-0.10	1950	1500-2510
Phenanthrene d-10	1517-22-2		188,184	0.14	0.11-0.17	1950	1500-2510
Benzo[a]anthracene d-12	1718-53-2		240,236	0.22	0.18-0.26	2000	1500-2500
Chrysene d-12	1719-03-5		240,236	0.25	0.20-0.30	1670	1210-2010
Benzo[b]fluoranthene d-12	93951-98-5		264,260	0.19	0.15-0.23	1980	1500-2490
Benzo[k]fluoranthene d-12	93952-01-3		264,260	0.18	0.14-0.22	1930	1470-2440
Benzo[a]pyrene d-12	63466-71-7		264,260	0.19	0.15-0.23	1960	1500-2510
Perylene d-12	1520-96-3		264,260	0.23	0.18-0.28	1960	1500-2500
Indeno[1,2,3-cd]pyrene d-12	203578-33-0		288,284	0.17	0.11-0.23	1880	1490-2480
Benzo[ghi]perylene d-12	93951-66-7		288,284	0.19	0.12-0.26	1970	1490-2490

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Bjorn Arvi_____

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Report Filename: GENERIC-SPECS_PAH_LO_PH5H0776.D__Form4B_SJ3563536.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4A

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025 **VER Data Filename:** PH5H0791.D

Instrument ID: LR GC/MS **Analysis Date:** 13-Feb-2025

GC Column ID: RTX5 **Analysis Time:** 03:11:00

COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene	91-20-3		128,102	0.07	0.06-0.08	2020	1480-2470
Acenaphthylene	208-96-8		152,151	0.20	0.16-0.24	2000	1490-2480
Acenaphthene	83-32-9		154,153	1.13	0.90-1.36	2030	1490-2480
2-Methylfluorene	1430-97-3		180,165	1.19	0.95-1.43	2100	1500-2500
Fluorene	86-73-7		166,165	0.97	0.78-1.16	2100	1490-2480
Phenanthrene	85-01-8		178,176	0.19	0.15-0.23	2050	1520-2530
Anthracene	120-12-7		178,176	0.18	0.14-0.22	2010	1500-2510
Fluoranthene	206-44-0		202,200	0.20	0.16-0.24	2070	1480-2470
Pyrene	129-00-0		202,200	0.21	0.17-0.25	2100	1490-2480
Benz[a]anthracene	56-55-3		228,226	0.26	0.21-0.31	2030	1510-2510
Chrysene	218-01-9		228,226	0.29	0.23-0.35	2040	1510-2520
Benzo[b]fluoranthene	205-99-2		252,253	0.22	0.18-0.26	1950	1500-2500
Benzo[j,k]fluoranthenes			252,253	0.22	0.18-0.26	2030	1510-2520
Benzo[e]pyrene	192-97-2		252,253	0.22	0.18-0.26	2120	1500-2500
Benzo[a]pyrene	50-32-8		252,253	0.21	0.17-0.25	2060	1510-2510
Perylene	198-55-0		252,253	0.21	0.17-0.25	2060	1500-2500
Dibenz[a,h]anthracene	53-70-3		278,139	0.15	0.10-0.20	1930	1510-2520
Indeno[1,2,3-cd]pyrene	193-39-5		276,138	0.20	0.13-0.27	1920	1520-2530
Benzo[ghi]perylene	191-24-2		276,138	0.21	0.14-0.28	1970	1500-2510
2-Methylnaphthalene	91-57-6		142,141	0.89	0.71-1.07	2040	1500-2500
1-Methylnaphthalene	90-12-0		142,141	0.92	0.74-1.10	2050	1500-2500
Biphenyl	92-52-4		154,152	0.28	0.22-0.34	2030	1490-2490
1,2-Dimethylnaphthalene	573-98-8		156,141	1.25	1.00-1.50	2030	1500-2490
2,6-Dimethylnaphthalene	581-42-0		156,141	0.65	0.52-0.78	2070	1510-2510
2,3,6-Trimethylnaphthalene	829-26-5		170,155	0.86	0.69-1.03	2040	1500-2490
2,3,5-Trimethylnaphthalene	2245-38-7		170,155	0.86	0.69-1.03	2050	1500-2500
1,7-Dimethylfluorene	442-66-0		194,177	0.07	0.06-0.08	2040	1490-2490
Dibenzothiophene	132-65-0		184,152	0.08	0.06-0.10	2000	1500-2500
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		198,197	0.70	0.56-0.84	2050	1510-2510
2,4-Dimethyldibenzothiophene	31317-18-7		212,197	0.49	0.39-0.59	2100	1500-2500
4,6-Dimethyldibenzothiophene	1207-12-1		212,197	0.15	0.12-0.18	2020	1500-2500
2-Methylphenanthrene	2531-84-2		192,191	0.58	0.46-0.70	2050	1490-2490
2-Methylanthracene	613-12-7		192,191	0.50	0.40-0.60	2060	1500-2500
1-Methylphenanthrene	832-69-9		192,191	0.60	0.48-0.72	2080	1500-2500
3,6-Dimethylphenanthrene	1576-67-6		206,191	0.34	0.27-0.41	2110	1510-2510
1,7-Dimethylphenanthrene	483-87-4		206,191	0.31	0.25-0.37	2070	1460-2440
1,2,6-Trimethylphenanthrene	30436-55-6		220,205	0.55	0.44-0.66	2120	1500-2500
Retene	483-65-8		234,219	1.51	1.21-1.81	2180	1500-2500
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		216,215	1.05	0.84-1.26	2190	1510-2520
5/6-Methylchrysene	3697-24-3/1705-85-7		242	0	N/A	2090	1500-2500
1-Methylchrysene	3351-28-8		242	0	N/A	2070	1500-2490
5,9-Dimethylchrysene	139493-40-6		256	0	N/A	2130	1510-2510
7-Methylbenzo[a]pyrene	63041-77-0		266	0	N/A	2110	1500-2500
1,4,6,7-Tetramethylnaphthalene	13764-18-6		184,139	0.03	0.02-0.04	2040	1500-2490
Anthracene d-10			188,184	0.13	0.10-0.16	1970	1490-2490
Fluoranthene d-10	93951-69-0		212,208	0.16	0.13-0.19	1930	1490-2490

Dibenzo[a,h]anthracene d-14	13250-98-1	292,288	0.23	0.15-0.31	1970	1440-2400

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Bjorn Arvi

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Report Filename: GENERIC-SPECS_PAH_LO_PH5H0791.D__Form4A_SJ3563641.html; Workgroup: WG92745; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4B

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H0791.D
Instrument ID:	LR GC/MS	**Analysis Date:**	13-Feb-2025
GC Column ID:	RTX5	**Analysis Time:**	03:11:00

LABELED COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene d-8	1146-65-2		136,134	0.09	0.07-0.11	2020	1500-2510
2-Methylnaphthalene d-10	7297-45-2		152,151	0.19	0.15-0.23	2020	1520-2530
Biphenyl d-10	1486-01-7		164	0	N/A	2000	1500-2510
2,6-Dimethylnaphthalene d-12	350820-12-1		168,150	0.68	0.54-0.82	2000	1510-2510
Acenaphthylene d-8	93951-97-4		160,158	0.16	0.13-0.19	2020	1510-2510
Dibenzothiophene d-8	33262-29-2		192,160	0.08	0.06-0.10	1930	1500-2510
Phenanthrene d-10	1517-22-2		188,184	0.14	0.11-0.17	1920	1500-2510
Benzo[a]anthracene d-12	1718-53-2		240,236	0.22	0.18-0.26	2060	1500-2500
Chrysene d-12	1719-03-5		240,236	0.25	0.20-0.30	1670	1210-2010
Benzo[b]fluoranthene d-12	93951-98-5		264,260	0.19	0.15-0.23	1970	1500-2490
Benzo[k]fluoranthene d-12	93952-01-3		264,260	0.18	0.14-0.22	1910	1470-2440
Benzo[a]pyrene d-12	63466-71-7		264,260	0.19	0.15-0.23	1940	1500-2510
Perylene d-12	1520-96-3		264,260	0.23	0.18-0.28	1970	1500-2500
Indeno[1,2,3-cd]pyrene d-12	203578-33-0		288,284	0.17	0.11-0.23	1920	1490-2480
Benzo[ghi]perylene d-12	93951-66-7		288,284	0.19	0.12-0.26	1960	1490-2490

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Bjorn Arvi_____

For Axys Internal Use Only [XSL Template: Pest4B.xsl; Created: 05-Mar-2025 16:06:38; Application: XMLTransformer-1.18.57;
Report Filename: GENERIC-SPECS_PAH_LO_PH5H0791.D__Form4B_SJ3563641.html; Workgroup: WG92745; Design ID: 5444]

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids														Tissue and Tissue Flora							Urine		Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
BFR	BTBPE	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
BFR	DBDPE	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
BFR	HBB	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
BFR	PBEB	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
Bisphenols	Bisphenol A	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol AF	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol B	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol E	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol F	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol S	SGS AXYS MLA-113	MLA-113					Y																		Y														
BPA and MPE	4,4'-dihydroxy-2,2-diphenylpropane (Bisphenol A) (BPA)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(3-carboxypropyl) phthalate (MCPP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-2-ethylhexyl phthalate (MEHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-benzyl phthalate (MBzP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-butyl phthalate (MBP) (n + iso)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-cyclohexyl phthalate (MCHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-ethyl phthalate (MEP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-iso-nonyl phthalate (MiNP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-methyl phthalate (MMP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)	SGS AXYS MLA-059	MLA-059																																				
OC Pesticides	"Organochlorine Pesticides and PCBs" category (CA only)	EPA 608	MLA-007																																				
OC Pesticides		EPA 625	MLA-007																																				
OC Pesticides	"Organochlorine Pesticides" category (CA only)	EPA 8081B	MLA-007																																				
OC Pesticides	"Pesticides" category (CA only)	EPA 8270E	MLA-007																																				
OC Pesticides	2,4'-DDD	EPA 625	MLA-007																																				
OC Pesticides		EPA 8270E	MLA-007							Y						Y																								
OC Pesticides		EPA 1699	MLA-028							Y											Y																				
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y														Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y															
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y													Y	Y	
OC Pesticides	2,4'-DDE	EPA 625	MLA-007																																				
OC Pesticides		EPA 8270E	MLA-007							Y						Y																								
OC Pesticides		EPA 1699	MLA-028							Y											Y																			
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y														Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y															
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y													Y	Y	
OC Pesticides	2,4'-DDT	EPA 625	MLA-007																																				
OC Pesticides		EPA 8270E	MLA-007							Y						Y																								
OC Pesticides		EPA 1699	MLA-028							Y											Y																			
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y														Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y															
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y													Y	Y	
OC Pesticides	4,4'-DDD	EPA 625	MLA-007																											Y	Y	Y		Y		Y			
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																								
OC Pesticides		EPA 1699	MLA-028							Y											Y																			
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y														Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y															
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y													Y	Y	
OC Pesticides	4,4'-DDE	EPA 625	MLA-007																											Y	Y	Y		Y		Y			
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																								
OC Pesticides		EPA 1699	MLA-028							Y											Y																			
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y														Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y															
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y													Y	Y	
OC Pesticides	4,4'-DDT	EPA 625	MLA-007																											Y	Y	Y		Y		Y			
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																								
OC Pesticides		EPA 1699	MLA-028							Y											Y																			
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y														Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y															
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y													Y	Y	
OC Pesticides	Aldrin	EPA 625	MLA-007																											Y	Y	Y		Y		Y			

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Alpha-HCH	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Beta-HCH	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Chlordane, technical	EPA 8270E	MLA-007							Y	Y			Y	Y															Y	Y			Y		Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007							Y																				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228																											Y								
OC Pesticides	cis-Chlordane (alpha-Chlordane)	EPA 8270E	MLA-007							Y	Y			Y		Y														Y	Y			Y				
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	cis-Nonachlor	EPA 8270E	MLA-007							Y						Y														Y								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Delta-HCH	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Dieldrin	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Endosulphan I	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Endosulphan II	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Endosulphan sulphate	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y					Y				Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y							Y						Y	Y	
OC Pesticides	Endrin	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine		Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Endrin aldehyde	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Endrin ketone	EPA 8081B	MLA-007						Y	Y				Y		Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Gamma-HCH (Lindane)	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Heptachlor	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Heptachlor epoxide	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Hexachlorobenzene	EPA 1625	MLA-007																										Y	Y				Y				
OC Pesticides		EPA 8270E	MLA-007							Y	Y				Y	Y																			Y				
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y						Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228							Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Methoxychlor	EPA 608	MLA-007																											Y				Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																						
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Mirex	EPA 8270E	MLA-007							Y				Y		Y														Y	Y			Y		Y		
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Oxychlordane	EPA 8270E	MLA-007							Y																												
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	Toxaphene	EPA 8270E	MLA-007																																		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
OC Pesticides	trans-Chlordane (gamma-Chlordane)	EPA 8270E	MLA-007							Y	Y			Y		Y														Y	Y			Y				
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y					Y							Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y									
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y		
OC Pesticides	trans-Nonachlor	EPA 8270E	MLA-007							Y						Y														Y									
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y									

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids												Tissue and Tissue Flora							Urine	Water	Water, Non-Potable											AFFF	
				CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y											Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y											Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y	Y	
Fluoride	Fluoride	EPA 1621	MLA-119																										Y	Y							
	Fluoride	SGS AXYS MLA-119 AOF	MLA-119																											Y							
		SGS AXYS MLA-119 EOF	MLA-119							Y																				Y							
	Fluoride	SGS AXYS MLA-119 TF	MLA-119							Y																				Y							
PAH	"Extractable Organics" category (CA only)	EPA 8270E	MLA-021						Y																												
PAH	"Semi-volatile Organic Compounds" category (CA only)	EPA 1625	MLA-021																																		
PAH	1,2,6-Trimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1,2-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1,4,6,7-Tetramethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1,7-Dimethylfluorene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1,7-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1,8-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1-Methylchrysene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1-Methylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	1-Methylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2,3,5-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2,3,6-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2,4-Dimethyldibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2,6-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2-Methylanthracene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2-Methylfluorene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	2-Methylnaphthalene	EPA 8270E	MLA-021							Y										Y										Y				Y				
PAH		SGS AXYS MLA-021	MLA-021					Y							Y	Y			Y	Y			Y		Y					Y						Y		
PAH	2-Methylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	3,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	3-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	3-Methylfluoranthene/ Benzo(a)fluorene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	3-Methylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	5,9-Dimethylchrysene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	5/6-Methylchrysenes	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	7-Methylbenzo(a)pyrene	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	9/4-Methylphenanthrenes	SGS AXYS MLA-021	MLA-021					Y																	Y												
PAH	Acenaphthene	EPA 1625	MLA-021																										Y	Y				Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y						Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Acenaphthylene	EPA 1625	MLA-021																										Y	Y				Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y						Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Anthracene	EPA 1625	MLA-021																										Y	Y				Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y						Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Benz[a]anthracene	EPA 1625	MLA-021																										Y	Y				Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y						Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Benzo[a]pyrene	EPA 1625	MLA-021																										Y	Y				Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y						Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Benzo[b]fluoranthene	EPA 1625	MLA-021																										Y	Y	Y			Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y						Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Benzo[e]pyrene	SGS AXYS MLA-021	MLA-021					Y												Y					Y												
PAH	Benzo[ghi]perylene	EPA 1625	MLA-021																										Y	Y				Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y						Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Benzo[j/k]fluoranthenes	SGS AXYS MLA-021	MLA-021					Y												Y					Y												
PAH	Benzo[k]fluoranthene	EPA 1625	MLA-021																										Y	Y	Y			Y		Y	
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021							Y					Y	Y			Y	Y			Y		Y					Y						Y		

Accreditation Scope

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				Serum	Solids												Tissue and Tissue Flora										Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PAH	Biphenyl	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Acenaphthenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Benz(a)anthracenes/chrysenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Biphenyls	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Dibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Fluorenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Naphthalenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C1-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Biphenyls	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Dibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Fluorenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Naphthalenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C2-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C3-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C3-Dibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C3-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C3-Fluorenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C3-Naphthalenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C3-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C4-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C4-Dibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C4-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C4-Naphthalenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	C4-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	Chrysene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021						Y	Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Dibenzo[a,h]anthracene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021						Y	Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Dibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y														
PAH	Fluoranthene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021						Y	Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Fluorene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021						Y	Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Indeno[1,2,3-cd]pyrene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021							Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Naphthalene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021						Y	Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Perylene	SGS AXYS MLA-021	MLA-021					Y												Y																			
PAH	Phenanthrene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021						Y	Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Pyrene	EPA 1625	MLA-021																										Y	Y				Y		Y			
PAH		EPA 8270E	MLA-021							Y	Y			Y	Y					Y																			
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y													Y		
PAH	Retene	SGS AXYS MLA-021	MLA-021					Y																															
PBDPE	BDE 10 2,6-dibromodiphenylether	EPA 1614	MLA-033													Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y												Y																			
PBDPE	BDE 100 2,2',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033													Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y												Y																			
PBDPE	BDE 105 2,3,3',4,4'-pentabromodiphenylether	EPA 1614	MLA-033													Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y												Y																			
PBDPE	BDE 11 3,3'-dibromodiphenylether	EPA 1614	MLA-033													Y																					Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora									Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 116 2,3,4,5,6-pentabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 119 2,3',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 12 3,4-dibromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 126 3,3',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 13 3,4'-dibromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 140 2,2',3,4,4',6'-hexabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 15 4,4'-dibromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 153 2,2',4,4',5,5'-hexabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 154 2,2',4,4',5',6-hexabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 155 2,2',4,4',6,6'-hexabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 166 2,3,4,4',5,6-hexabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 17 2,2',4-tribromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 181 2,2',3,4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 183 2,2',3,4,4',5',6-heptabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 190 2,3,3',4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 206 2,2',3,3',4,4',5,5',6-nonabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 207 2,2',3,3',4,4',5,6,6'-nonabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 208 2,2',3,3',4,5,5',6,6'-nonabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 209 Decabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 25 2,3',4-tribromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 28 2,4,4'-tribromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 30 2,4,6-tribromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 33 2',3,4-tribromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 35 3,3',4-tribromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 37 3,4,4'-tribromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 47 2,2',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 49 2,2',4,5'-tetrabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 66 2,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 7 2,4-dibromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 75 2,4,4',6-tetrabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 77 3,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													

Accreditation Scope

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				Serum	Solids											Tissue and Tissue Flora							Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PBDPE	BDE 8 2,4'-dibromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y											Y						Y													
PBDPE	BDE 85 2,2',3,4,4'-pentabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y											Y						Y													
PBDPE	BDE 99 2,2',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y											Y						Y													
PCB Aroclors	"Organochlorine Pesticides and PCBs" category (CA only)	EPA 625	MLA-007																																			
PCB Aroclors	"PCBs" category (CA only)	EPA 8270E	MLA-007						Y																													
PCB Aroclors	PCB Aroclor 1016	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1016/1242	EPA 8270E	MLA-007																																			
PCB Aroclors	PCB Aroclor 1221	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1232	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1242	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1248	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1254	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1260	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1268	SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 1 2-Chlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y								Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 10 2,6-Dichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y								Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 100 2,2',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y								Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 101 2,2',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 101/90/89	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 102 2,2',4,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 103 2,2',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 104 2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 105 2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 105/127	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 106 2,3,3',4,5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 107 2,3,3',4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 107/109	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 108 2,3,3',4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 109 2,3,3',4,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 11 3,3'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y					Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 110 2,3,3',4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y						Y						Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 111 2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 111/117	EPA 8270E	MLA-007																																			
PCB congeners	PCB 112 2,3,3',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 113 2,3,3',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 114 2,3,4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 115 2,3,4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 116 2,3,4,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 117 2,3,4',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 118/106	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 119 2,3',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 12 3,4-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 12/13	EPA 8270E	MLA-007																																			
PCB congeners	PCB 120 2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora						Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 121 2,3',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 122 2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 123 2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-908	MLA-908							Y						Y				Y		Y								Y							Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 124 2,3',4',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 125 2,3',4',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 126 3,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 127 3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y					Y					Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 128 2,2',3,3',4,4'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y					Y					Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 129 2,2',3,3',4,5-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y					Y					Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 13 3,4'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y					Y					Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									

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				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners	PCB 130 2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 131 2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 132/168	EPA 8270E	MLA-007																																			
PCB congeners	PCB 133 2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 134 2,2',3,3',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 134/143	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 135 2,2',3,3',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 136 2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 137 2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 138 2,2',3,4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 138/163/164	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 139 2,2',3,4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y						Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y			Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 14 3,5-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 140 2,2',3,4,4',6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 141 2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 142 2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 143 2,2',3,4,5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 144 2,2',3,4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 144/135	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 145 2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 146 2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 147 2,2',3,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 148 2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 149 2,2',3,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 149/139	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 15 4,4'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 150 2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 151 2,2',3,5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 152 2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 153 2,2',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 154 2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 155 2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 156 2,3,3',4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 157 2,3,3',4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 158 2,3,3',4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 158/160	EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners	PCB 159 2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007																						Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 16 2,2',3-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 16/32	EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners	PCB 160 2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 161 2,3,3',4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 162 2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 163 2,3,3',4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 164 2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 165 2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 166 2,3,4,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 167 2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 168 2,3',4,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 169 3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 17 2,2',4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 170 2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 170/190	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 171 2,2',3,3',4,4',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 172 2,2',3,3',4,5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 172/192	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 173 2,2',3,3',4,5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 174 2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 174/181	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 175 2,2',3,3',4,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 176 2,2',3,3',4,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 177 2,2',3,3',4,5',6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 178 2,2',3,3',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 179 2,2',3,3',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 18 2,2',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 181 2,2',3,4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 182 2,2',3,4,4',5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 183 2,2',3,4,4',5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 184 2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				

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SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine		Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 185 2,2',3,4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 186 2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 187 2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 187/182	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 188 2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 19 2,2',6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 190 2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 191 2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 192 2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y							
PCB congeners	PCB 193 2,3,3',4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			

Accreditation Scope

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				Serum	Solids											Tissue and Tissue Flora						Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 196 2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 196/203	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners	PCB 197 2,2',3,3',4,4',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 198 2,2',3,3',4,5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 2 3-Chlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 20 2,3,3'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y										Y									
PCB congeners	PCB 200 2,2',3,3',4,5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y		

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				Serum	Solids											Tissue and Tissue Flora							Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 201 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 202 2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 203 2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 204 2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 207 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 209 Decachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 21 2,3,4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 22 2,3,4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 23 2,3,5-Trichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 23/34	EPA 8270E	MLA-007																																				
PCB congeners	PCB 24 2,3,6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 24/27	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y															
PCB congeners	PCB 25 2,3',4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 26 2,3',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 27 2,3',6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 28 2,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 29 2,4,5-Trichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 3 4-Chlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y																				Y									
PCB congeners	PCB 30 2,4,6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y				Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 31 2,4',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 32 2,4',6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 33 2,3',4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 34 2,3',5'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 35 3,3',4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 36 3,3',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 37 3,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 38 3,4,5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 39 3,4',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 4 2,2'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 4/10	EPA 8270E	MLA-007																																			
PCB congeners	PCB 40 2,2',3,3'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 41 2,2',3,4-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 41/71/64/68	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 42 2,2',3,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 42/59	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 43 2,2',3,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 44 2,2',3,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 45 2,2',3,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 46 2,2',3,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 47 2,2',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 47/48/75	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 48 2,2',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 49 2,2',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y							
PCB congeners	PCB 49/43	EPA 8270E	MLA-007																																			

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				Serum	Solids											Tissue and Tissue Flora						Urine		Water	Water, Non-Potable													AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-007	MLA-007																Y						Y														
PCB congeners	PCB 5 2,3-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 50 2,2',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 51 2,2',4,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 52 2,2',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 52/73	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 53 2,2',5,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 54 2,2',6,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 55 2,3,3',4-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 56 2,3,3',4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 56/60	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 57 2,3,3',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 58 2,3,3',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 59 2,3,3',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		

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				Serum	Solids											Tissue and Tissue Flora											Urine		Water	Water, Non-Potable													AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 6 2,3'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 60 2,3,4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 61 2,3,4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 62 2,3,4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 62/65	EPA 8270E	MLA-007																																						
PCB congeners	PCB 63 2,3,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 64 2,3,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 65 2,3,5,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y	Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 66 2,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 66/80	EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y							Y															
PCB congeners	PCB 67 2,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 68 2,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 69 2,3',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 7 2,4-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 7/9	EPA 8270E	MLA-007																																				
PCB congeners	PCB 70 2,3',4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 70/76	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y														
PCB congeners	PCB 71 2,3',4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 72 2,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 73 2,3',5',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 74 2,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 74/61	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y														
PCB congeners	PCB 75 2,4,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 76 2,3',4',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 77 3,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 78 3,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y								Y		Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 79 3,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y									Y	Y										Y								
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y					Y			Y							Y						Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 8 2,4'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 8/5	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 80 3,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 81 3,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 82 2,2',3,3',4-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 83 2,2',3,3',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 83/108	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 84 2,2',3,3',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 85 2,2',3,4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 85/120	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 86 2,2',3,4,5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 87 2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 87/115/116	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 88 2,2',3,4,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 88/121	EPA 8270E	MLA-007																																			
PCB congeners	PCB 89 2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 9 2,5-Dichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 90 2,2',3,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 91 2,2',3,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 92 2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 93 2,2',3,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 94 2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 95 2,2',3,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 95/93	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 96 2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 97 2,2',3,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 97/86	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 98 2,2',3,4',6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 98/102	EPA 8270E	MLA-007																																			
PCB congeners	PCB 99 2,2',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
				CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y															
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y															
PCB congeners		EPA 1628	MLA-908							Y										Y																	
PCB congeners	PCB congeners, total	EPA 1668	MLA-010											Y																				Y			
PCB congeners	PCBs, as congeners	EPA 1668	MLA-010																	Y																	
PCB congeners		SGS AXYS MLA-010	MLA-010																	Y																	
PCB congeners		SGS AXYS MLA-210	MLA-210							Y										Y																	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y										Y																	
PCB congeners	Total Dichlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Heptachlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Hexachlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Monochlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Nonachlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Octachlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Pentachlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Polychlorinated biphenyls	SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners	Total Tetrachlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners	Total Trichlorobiphenyls	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y												Y					Y												
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y												
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	Y
PCDDF	"Dioxins and Dibenzofurans" category (CA only)	EPA 1613	MLA-017																																		
PCDDF		EPA 8290A	MLA-017																																		
PCDDF	1,2,3,4,6,7,8-HpCDD	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y		Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y										Y		Y			Y					Y							
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y				Y		Y	Y		Y	Y				Y				Y		Y	Y
PCDDF		ATM 16130	MLA-217							Y										Y										Y							
PCDDF	1,2,3,4,6,7,8-HpCDF	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y		Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y										Y		Y			Y					Y							
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y				Y		Y	Y		Y	Y				Y				Y		Y	Y
PCDDF		ATM 16130	MLA-217							Y										Y										Y							
PCDDF	1,2,3,4,7,8,9-HpCDF	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y		Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y										Y		Y			Y					Y							
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y				Y		Y	Y		Y	Y				Y				Y		Y	Y
PCDDF		ATM 16130	MLA-217							Y										Y										Y							
PCDDF	1,2,3,4,7,8-HxCDD	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y		Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y										Y		Y			Y					Y							
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y				Y		Y	Y		Y	Y				Y				Y		Y	Y
PCDDF		ATM 16130	MLA-217							Y										Y										Y							
PCDDF	1,2,3,4,7,8-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y		Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y										Y		Y			Y					Y							
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y				Y		Y	Y		Y	Y				Y				Y		Y	Y
PCDDF		ATM 16130	MLA-217							Y										Y										Y							

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCDDF	1,2,3,6,7,8-HxCDD	EPA 1613	MLA-017		Y					Y					Y					Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,6,7,8-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y	Y	
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8,9-HxCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8,9-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8-PeCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8-PeCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,4,6,7,8-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,4,7,8-PeCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,7,8-TCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,7,8-TCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	OCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	OCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HpCDD	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HpCDF	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HxCDD	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HxCDF	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora							Urine		Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCDDF	Total PCDD	EPA 1613	MLA-017		Y																					Y												
PCDDF		EPA 8290A	MLA-017		Y																					Y												
PCDDF	Total PCDD/F	EPA 1613	MLA-017		Y																					Y												
PCDDF		EPA 8290A	MLA-017		Y																					Y												
PCDDF	Total PCDF	EPA 1613	MLA-017		Y																					Y												
PCDDF		EPA 8290A	MLA-017		Y																					Y												
PCDDF	Total PeCDD	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PCDDF	Total PeCDF	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PCDDF	Total TCDD	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PCDDF	Total TCDF	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PFAS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y										Y	Y										Y	Y								Y	Y
PFAS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	SGS AXYS MLA-110	MLA-110	Y				Y											Y						Y												Y	
PFAS	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	SGS AXYS MLA-110	MLA-110			Y				Y							Y			Y								Y									Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y		Y	Y			Y	Y	Y		Y		Y	Y			Y			Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	SGS AXYS MLA-110	MLA-110			Y				Y		Y					Y			Y	Y						Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y		Y	Y			Y	Y	Y		Y		Y	Y			Y			Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	4,8-dioxa-3H-perfluorononanoate (ADONA)	SGS AXYS MLA-110	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS		DoD QSM Version 5.3	MLA-110			Y											Y											Y	Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y											Y											Y	Y								Y	
PFAS		EPA 1633	MLA-110							Y					Y					Y									Y									
PFAS		EPA 1633 draft	MLA-110			Y											Y											Y									Y	
PFAS	4:2 Fluorotelomersulfonate (4:2 FTS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y			Y	Y								Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y		Y	Y			Y	Y	Y		Y		Y	Y			Y			Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	6:2 Fluorotelomersulfonate (6:2 FTS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y			Y	Y								Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y		Y	Y			Y	Y	Y		Y		Y	Y			Y			Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	8:2 Fluorotelomersulfonate (8:2 FTS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y			Y	Y								Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y		Y	Y			Y	Y	Y		Y		Y	Y			Y			Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y										Y	Y										Y	Y								Y	Y
PFAS	9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	SGS AXYS MLA-110	MLA-110	Y				Y											Y						Y													
PFAS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	SGS AXYS MLA-110	MLA-110			Y				Y							Y			Y								Y									Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y		Y	Y			Y	Y	Y		Y		Y	Y			Y			Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	Dodecafluoro-3H-4,8-dioxanonanoate (NaDONA)	SGS AXYS MLA-110	MLA-110	Y					Y										Y						Y													
		EPA 1633 draft	MLA-110									Y										Y												Y					
PFAS	Hexafluoropropylene oxide dimer acid (HFPO-DA)	SGS AXYS MLA-110	MLA-110	Y		Y			Y								Y			Y					Y			Y									Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y		Y	Y			Y	Y	Y		Y		Y	Y			Y			Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	Hexafluoropropylene oxide dimer acid, anion and acid (HFPO-DA)	SGS AXYS MLA-110	MLA-110			Y	Y										Y	Y										Y	Y								Y	Y
PFAS	Hexaflurorpropylene oxide dimer acid (HFPO-DA)	SGS AXYS MLA-110	MLA-110	Y						Y										Y											Y							
PFAS	N-Ethylperfluorooctane sulfonamide (EtFOSAm)	SGS AXYS MLA-110	MLA-110							Y										Y											Y							
PFAS		DoD QSM Version 5.3	MLA-110						Y																					Y								
PFAS		DoD QSM Version 5.4	MLA-110						Y																					Y								

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				Serum	Solids											Tissue and Tissue Flora							Urine		Water, Non-Potable													AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PFAS		EPA 1633	MLA-110									Y									Y											Y							
PFAS		EPA 1633 draft	MLA-110																																				
PFAS	N-Ethylperfluorooctanesulfonamide (N-EtFOSA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y									Y	Y	Y						Y		Y	Y									Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y											Y									Y	Y											Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y					Y	Y				Y			Y			Y			Y	Y					Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Ethylperfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Ethylperfluorooctanesulfonamidoethanol (N-EtFOSE)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Methylperfluorooctanesulfonamide (N-MeFOSA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Methylperfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorobutane Sulfonate (PFBS)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorobutanoate (PFBA)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorodecanoate (PFDA)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110			Y											Y										Y										Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y			Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y

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SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora							Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PFAS	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorononanoate (PFNA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorooctanesulfonamide (PFOSA), a.k.a. FOSA	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y			Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS		DoD AFFF01 Rev 1.0	MLA-110										Y																							Y	Y
PFAS	Perfluorooctanoate (PFOA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS		DoD AFFF01 Rev 1.0	MLA-110																																	Y	Y
PFAS	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	

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				Serum	Solids											Tissue and Tissue Flora							Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y								Y	Y	Y	Y								Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	4,4,5,5,6,6,6-heptafluorohexanoic acid (3:3 FTCA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	2H,2H,3H,3H-perfluorooctanoic acid (5:3 FTCA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	2H,2H,3H,3H-perfluorodecanoic acid (7:3 FTCA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoro-3-methoxypropanoic acid (PFMPA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoro-4-methoxybutanoic acid (PFMBA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PPCP	1,7-Dimethylxanthine	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	10-hydroxy-amitriptyline	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	2-hydroxy-ibuprofen	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	4-Epianhydrochlortetracycline (EACTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	4-Epianhydrotetracycline (EATC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	4-Epichlortetracycline (ECTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	4-Epioxytetracycline (EOTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	4-Epitetracycline (ETC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Acetaminophen	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Albuterol	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Alprazolam	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Amitriptyline	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Amlodipine	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Amphetamine	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Anhydrochlortetracycline (ACTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Anhydrotetracycline (ATC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Atenolol	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Atorvastatin	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Azithromycin	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Benzoylecgonine	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Benztropine	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Betamethasone	SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Bisphenol A	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Caffeine	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Carbadox	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075					Y																	Y													
PPCP	Carbamazepine	EPA 1694	MLA-075								Y																				Y							

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora							Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cefotaxime	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Chlortetracycline (CTC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cimetidine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Ciprofloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Clarithromycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Clinafloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Clonidine	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cloxacillin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cocaine	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Codeine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cotinine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	DEET (N,N-diethyl-m-toluamide)	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Dehydronifedipine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Demeclocycline	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Desmethyldiltiazem	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Diazepam	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Digoxigenin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Digoxin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Diltiazem	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Diphenhydramine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Doxycycline	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Enalapril	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Enrofloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Erythromycin	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Erythromycin anydrate	EPA 1694	MLA-075								Y																				Y						
PPCP	Flumequine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Fluocinonide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Fluoxetine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Fluticasone propionate	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Furosemide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Gemfibrozil	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Glipizide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Glyburide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Hydrochlorothiazide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Hydrocodone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Hydrocortisone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Ibuprofen	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Isochlortetracycline (ICTC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Lincomycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Lomefloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Meprobamate	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Metformin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Methylprednisolone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Metoprolol	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Miconazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Minocycline	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Naproxen	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Norfloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora							Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PPCP	Norfluoxetine	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Norgestimate	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Norverapamil	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Ofloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Ormetoprim	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Oxacillin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Oxolinic acid	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Oxycodone	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Oxytetracycline (OTC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Paroxetine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Penicillin G	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Penicillin V	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Prednisolone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Prednisone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Promethazine	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Propoxyphene	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Propranolol	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Ranitidine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Roxithromycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sarafloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sertraline	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Simvastatin	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfachloropyridazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfadiazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfadimethoxine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfamerazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfamethazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfamethizole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfamethoxazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfanilamide	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Sulfathiazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Tetracycline (TC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Theophylline	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Thiabendazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Trenbolone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Trenbolone acetate	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Triamterene	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Triclocarban	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Triclosan	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Trimethoprim	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Tylosin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Valsartan	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Verapamil	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Virginiamycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Warfarin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
TOP	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-111	MLA-111				Y																		Y												
TOP	Perfluorobutanoate (PFBA)	SGS AXYS MLA-111	MLA-111				Y																		Y												
TOP	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-111	MLA-111				Y																		Y												
TOP	Perfluorodecanoate (PFDA)	SGS AXYS MLA-111	MLA-111				Y																		Y												

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora									Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
TOP	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorononanoate (PFNA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorooctanoate (PFOA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
AO	6PPD-Quinone	SGS AXYS MLA-118	MLA-118																						Y													

Note * Analysis of pesticides and PCBs in non-potable water samples by SGS AXYS method MLA-007, with the exception of NPDES or State permitted discharges and Stormwater applications, may fall within the scope of Washington State Department of Ecology solids matrix accreditation, subject to approval of the Ecology Project Manager.

Note ** PFAS by LC-MS/MS compliant with US DoD QSM 5.3 table B-15; US DoD/DOE QSM 5.4 and 6.0 table B-24

Legend

Y	Accreditation scope
AFFF	Aqueous film forming foam
AO	Antiozonants
BFR	Brominated flame retardants (non-PBDPE)
BPA and mPE	Bisphenol A and mono-Phthalate Esters
OC Pesticides	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PBDPE	Polybrominated diphenylethers
PCB	Polychlorinated Biphenyls
PCDDF	Polychlorinated dibenzodioxins/furans
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceutical and Personal Care Products
TOP	Total Oxidizable Precursors
California WB	California Water Boards, Lab ID 2911
Florida DOH	Florida Department of Health, Lab ID E871007, (NELAC Standard)
Pennsylvania DEP	Pennsylvania Department of Environmental Protection
Minnesota DOH	Minnesota Department of Health, Lab ID 232-999-430, (NELAC Standard)
New Jersey DEP	New Jersey Department of Environmental Protection, Lab ID CANA005, (NELAC Standard)
New York DOH	New York Department of Health, Lab ID 11674, (NELAC Standard)
Washington DE	Washington Department of Ecology, Lab ID C404
Virginia DGS	Virginia Department of General Services, Division of Consolidated Laboratory Services, Lab ID 460224, (NELAC Standard)
Alaska DEC	Alaska Department of Environmental Conservation, Contaminated Sites Laboratory Approval 17-014
Maine DOH	Maine Center for Disease Control and Prevention, Department of Health and Human Services, Lab ID CN00003
ANAB DoD	ANSI National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.3, 5.4, US DoD/DOE QSM 6.0 Standard)
CALA	Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2017 Standard)

ANAB ACCREDITED ISO/IEC 17025 DOD ELAP Certificate ADE-1861

ilac-MRA

ilac-MRA

CALA Testing Accreditation No. A2637

SGS AXYS

2045 Mills Road West
Sidney, BC, Canada V8L5X2

TEL: (250) 655-5800
TOLL-FREE: 1-888-373-0881

SGS AXYS Client No.: 4608

Client Address: Worley Canada Services Ltd
49 Quarry Park BLVD SE
Calgary, AB, CA, T2C 5H9

The SGS AXYS contact for these data is Suma Thomas.

BATCH SUMMARY

Batch ID: WG92967	***Date:*** 28-Mar-2025
Analysis Type: PAH	***Matrix Type:*** SPMD

BATCH MAKEUP

Contract: 4608

Samples:

L41307-3	Day Zero-3
L42283-4	AEMP-US-01 17-SEP-24
L42283-5	AEMP-US-02 17-SEP-24
L42283-6	AEMP-US-03 13-SEP-24
L42283-7	AEMP-US-04 13-SEP-24
L42283-8	AEMP-US-05 12-SEP-24
L42283-9	AEMP-DS-01 13-SEP-24
L42283-10	AEMP-DS-02 12-SEP-24
L42283-11	AEMP-DS-04 13-SEP-24
L42283-12	AEMP-DS-05 17-SEP-24
L42283-14	AEMP-DS-07 18-SEP-24
L42283-15	AEMP-DS-08 17-SEP-24
L42283-16	AEMP-DS-09 17-SEP-24
L42283-17	Dup 1 13-SEP-24

Blank: WG92967-101

Reference or Spike: WG92967-102

Duplicate:

Comments:

1. Data are considered final.
2. Data are not blank corrected. Sample data should be evaluated with consideration of analyte levels in the Lab Blank (AXYS ID WG92967-101).
3. Recoveries of Fluoranthene, Pyrene, 1,7-Dimethylphenanthrene, 1,2,6-Trimethylphenanthrene, Retene and 3-Methylfluoranthene/Benzo[a]fluorenein the OPR (AXYS ID WG92967-102) were above the method upper control limits. Sample data for these analytes might be similarly overestimated.

Contract 4608 - Day Zero SPMDs

SAMPLE	Client ID	Receive Date
41307-1	Day Zero-1	30-Apr-24
41307-2	Day Zero-2	30-Apr-24
41307-3	Day Zero-3	30-Apr-24

11:00.

SGS AXYS

SGS AXYS Analytical Services Chain of Custody

Mills Road West, Sidney, British Columbia, Canada V8L 5X2
TEL: (250) 655-5800 TOLL FREE 1-888-373-0881 FAX: (250) 655-5811

2045 SGS AXYS CLIENT #: 4608

PAGE 1 OF 1

Client / Reporting Information	Invoice to
Company Name Worley Consulting	Same as report to (Y / N). If no, please fill in below YES
Address - 49 Quarry Park BLVD SE, Calgary, AB T2C 5H9	Company - Worley Canada Services Ltd.
	Address - 49 Quarry Park Blvd SE, Calgary AB T2C 5H9
Project Contact Alex Haigh; Stacy Gibb	Contact Stacy Gibb
Phone # 587 897 6249; 587-434-5393	Email stacy.gibb@worley.com
Email alex.haigh@worley.com; stacy.gibb@worley.com	Client Purchase Order # or Quote #
Project Name or Number: Norman Wells AEMP 417085-54419.24200	Sampler Signature: Name: Alex Haigh, Stacy Gibb

Client Sample Identification	Matrix	Deploy Date/Time (YYYY-MM-DD/HH:MM)	Retrieve Date/Time (YYYY-MM-DD/HH:MM)	Container Type	# Strips	SGS AXYS Lab Sample ID (Lab use only)	Analysis Requested: PAHs	Analysis Requested: Alkylated PAHs
AEMP-US-01	SPMD	2024-08-15/15:45	2024-09-17/13:39	SPMD	3	L42283-4	x	x
AEMP-US-02	SPMD	2024-08-15/16:53	2024-09-17/13:39	SPMD	3	-5	x	x
AEMP-US-03	SPMD	2024-08-16/09:03	2024-09-13/11:23	SPMD	3	-6	x	x
AEMP-US-04	SPMD	2024-08-16/16:03	2024-09-13/14:21	SPMD	3	-7	x	x
AEMP-US-05	SPMD	2024-08-16/15:20	2024-09-12/16:00	SPMD	3	-8	x	x
AEMP-DS-01	SPMD	2024-08-16/13:31	2024-09-13/12:10	SPMD	3	-9	x	x
AEMP-DS-02	SPMD	2024-08-16/12:21	2024-09-12/10:03	SPMD	3	-10	x	x
~~AEMP-DS-03~~	~~SPMD~~	~~2024-08-15/11:20~~	~~2024-09-17/12:08~~	~~SPMD~~	~~3~~	Broke in transit	~~x~~	~~x~~
AEMP-DS-04	SPMD	2024-08-16/10:41	2024-09-13/10:46	SPMD	3	-11	x	x
AEMP-DS-05	SPMD	2024-08-15/11:22	2024-09-17/11:02	SPMD	3	-12	x	x
AEMP-DS-06	NA	NA	NA	NA	NA	Did not arrive	NA	NA
AEMP-DS-07	SPMD	2024-08-14/11:52	2024-09-18/13:58	SPMD	3	-14	x	x
AEMP-DS-08	SPMD	2024-08-15/13:45	2024-09-17/10:13	SPMD	3	-15	x	x
AEMP-DS-09	SPMD	2024-08-15/12:07	2024-09-17/11:37	SPMD	3	-16	x	x
Trip Blank	NA	NA	NA	NA	NA	Did not arrive	NA	NA
Field Blank	NA	NA	NA	NA	NA	↓	NA	NA
Day Zero	SPMD			SPMD	1	Previously received. In another Log'n	x	x
Dup 1	SPMD	2024-08-16/13:31	2024-09-13/12:10	SPMD	3	-17	x	x

Comments/Remarks

Please don't analyze AEMP-DS-03 since the container was broken in transit.

Sample Custody

Relinquished by (Signature):	Date: 2024-10-16	Received by (Signature): Nelson F-H	Date: 18-Oct-24
Stacy Gibb	Time: 10:00		Time: 0855

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
Day Zero-3
Sample Collection:
N/A

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L41307-3
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	30-Apr-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	18-Mar-2025 **Time:** 15:10:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1334.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1329.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		33.4	1.00 (S)	0.07	1.007
Acenaphthylene	208-96-8		0.802	0.723 (S)	0.21	1.003
Acenaphthene	83-32-9		1.84	1.18 (S)	0.98	1.048
2-Methylfluorene	1430-97-3		1.53	0.965 (S)	1.12	0.939
C2 Phenanthrenes/Anthracenes			5.84	1.59 (S)		
Fluorene	86-73-7		2.27	0.850 (S)	1.14	0.844
Phenanthrene	85-01-8		16.8	0.477 (S)	0.19	1.003
Anthracene	120-12-7		0.909	0.471 (S)	0.17	1.010
C1 Phenanthrenes/Anthracenes			7.09	0.750 (S)		
Fluoranthene	206-44-0	NDR	2.89	0.484 (S)	0.24	1.204
Pyrene	129-00-0	NDR	2.45	0.471 (S)	0.40	1.239
Benz[a]anthracene [3]	56-55-3	ND		0.422 (S)		
Chrysene [4]	218-01-9	ND		0.419 (S)		
Benzo[b]fluoranthene	205-99-2	ND		0.679 (S)		
Benzo[j,k]fluoranthenes		ND		0.677 (S)		
Benzo[e]pyrene	192-97-2	ND		0.929 (S)		
Benzo[a]pyrene	50-32-8	ND		0.871 (S)		
Perylene	198-55-0	ND		0.968 (S)		
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.867 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		0.869 (S)		
Benzo[ghi]perylene	191-24-2	ND		0.891 (S)		
2-Methylnaphthalene	91-57-6		24.3	1.36 (S)	0.89	1.009
1-Methylnaphthalene	90-12-0		14.0	1.50 (S)	1.03	1.040
C1-Naphthalenes			38.3	1.36 (S)		
Biphenyl	92-52-4		12.1	0.769 (S)	0.28	1.005
C1-Biphenyls			18.7	0.969 (S)		
C2-Biphenyls			18.9	1.37 (S)		
C2-Naphthalenes			56.5	1.98 (S)		
1,2-Dimethylnaphthalene	573-98-8	ND		1.98 (S)		

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		8.14	1.51 (S)	0.69	1.010
C3-Naphthalenes			31.1	1.34 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		8.06	1.37 (S)	0.82	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		5.94	1.32 (S)	0.95	1.224
C4-Naphthalenes			4.90	1.29 (S)		
C1-Acenaphthenes		ND		1.30 (S)		
C1-Fluorenes			13.3	0.965 (S)		
1,7-Dimethylfluorene	442-66-0	ND		1.23 (S)		
C2-Fluorenes			13.9	1.23 (S)		
C3-Fluorenes		ND		1.39 (S)		
Dibenzothiophene	132-65-0		1.51	0.563 (S)	0.09	1.003
C1-Dibenzothiophenes		ND		0.701 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	ND		0.701 (S)		
C2-Dibenzothiophenes			19.0	0.985 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	ND		0.985 (S)		
4,6-Dimethyldibenzothiophene	1207-12-1	ND		0.791 (S)		
C3-Dibenzothiophenes			17.2	1.09 (S)		
C4-Dibenzothiophenes			5.59	0.739 (S)		
3-Methylphenanthrene	832-71-3		2.10	0.765 (S)	0.63	1.087
2-Methylphenanthrene	2531-84-2		2.50	0.741 (S)	0.57	1.092
2-Methylanthracene	613-12-7	NDR	1.07	0.808 (S)	1.52	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		1.14	0.765 (S)	0.65	1.106
1-Methylphenanthrene	832-69-9		1.35	0.750 (S)	0.71	1.110
3,6-Dimethylphenanthrene	1576-67-6	ND		1.55 (S)		
2,6-Dimethylphenanthrene	17980-16-4	ND		1.59 (S)		
1,7-Dimethylphenanthrene	483-87-4	ND		1.64 (S)		
1,8-Dimethylphenanthrene	7372-87-4	ND		1.59 (S)		
C3-Phenanthrenes/Anthracenes		ND		1.17 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6	ND		1.17 (S)		
Retene	483-65-8		2.50	1.60 (S)	1.34	1.301
C4-Phenanthrenes/Anthracenes			20.7	1.60 (S)		
C1-Fluoranthenes/Pyrenes		ND		0.626 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	ND		0.626 (S)		
C2-Fluoranthenes/Pyrenes		ND		0.652 (S)		
C3-Fluoranthenes/Pyrenes		ND		0.391 (S)		
C4-Fluoranthenes/Pyrenes		ND		0.574 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]		ND		0.505 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7	ND		0.531 (S)		
1-Methylchrysene	3351-28-8	ND		0.482 (S)		
C2-Benzo[a]anthracenes/Chrysenes [4]		ND		0.883 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		0.883 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		0.650 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		0.728 (S)		
C1-Benzofluoranthenes/Benzopyrenes		ND		1.30 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		1.30 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		1.47 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	NDR	1.73	1.29 (S)	0.12	1.375
Anthracene d-10		NDR	20900	1.28 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		30700	1.36 (S)	0.16	0.835
Dibenzo[a,h]anthracene d-14	13250-98-1		2670	1.10 (S)	0.26	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L41307-3_Form1A_PH5H1334.D_SJ3582419.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
Day Zero-3
Sample Collection:
N/A

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L41307-3
Sample Receipt Date:	30-Apr-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	18-Mar-2025 **Time:** 15:10:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1334.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1329.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1370	34.1	0.09	0.610
2-Methylnaphthalene d-10		4040	1820	45.0	0.19	0.756
Biphenyl d-10		4010	2100	52.3		0.869
2,6-Dimethylnaphthalene d-12		4020	2200	54.7	0.66	0.896
Acenaphthylene d-8		4020	2240	55.6	0.16	0.961
Dibenzothiophene d-8		4010	2730	68.0	0.08	0.792
Phenanthrene d-10		4010	2930	73.0	0.14	0.808
Benzo[a]anthracene d-12		4000	3270	81.8	0.22	1.164
Chrysene d-12		3220	2680	83.3	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3440	86.2	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3390	86.8	0.18	0.961
Benzo[a]pyrene d-12		4010	3390	84.4	0.18	1.008
Perylene d-12		4000	3380	84.5	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3120	78.7	0.17	1.205
Benzo[ghi]perylene d-12		3980	3200	80.4	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L41307-3_Form2_PH5H1334.D_SJ3582419.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-US-01 17-SEP-24
Sample Collection:
17-Sep-2024 13:39

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-4
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	18-Mar-2025 **Time:** 16:19:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1336.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1329.D

Concentration Units: ng/sample

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		86.3	1.18 (S)	0.07	1.006
Acenaphthylene	208-96-8		10.6	0.894 (S)	0.22	1.003
Acenaphthene	83-32-9		22.2	1.56 (S)	1.04	1.047
2-Methylfluorene	1430-97-3		99.3	1.40 (S)	1.16	0.939
C2 Phenanthrenes/Anthracenes			3050	2.32 (S)		
Fluorene	86-73-7		104	1.08 (S)	1.00	0.844
Phenanthrene	85-01-8		1210	1.08 (S)	0.19	1.003
Anthracene	120-12-7		24.7	1.07 (S)	0.20	1.011
C1 Phenanthrenes/Anthracenes			2130	1.93 (S)		
Fluoranthene	206-44-0		515	1.32 (S)	0.20	1.203
Pyrene	129-00-0		235	1.29 (S)	0.24	1.239
Benz[a]anthracene [3]	56-55-3	NDR	9.27	0.828 (S)	0.41	1.002
Chrysene [4]	218-01-9		98.8	0.818 (S)	0.31	1.002
Benzo[b]fluoranthene	205-99-2		6.29	1.26 (S)	0.22	1.004
Benzo[j,k]fluoranthenes		NDR	2.39	1.30 (S)	0.29	1.002
Benzo[e]pyrene	192-97-2		12.7	1.71 (S)	0.23	0.996
Benzo[a]pyrene	50-32-8	ND		1.61 (S)		
Perylene	198-55-0		53.2	1.75 (S)	0.23	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.947 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	1.41	1.06 (S)	2.93	1.002
Benzo[ghi]perylene	191-24-2		4.15	1.06 (S)	0.22	1.002
2-Methylnaphthalene	91-57-6		56.1	1.57 (S)	0.92	1.008
1-Methylnaphthalene	90-12-0		65.6	1.74 (S)	0.93	1.040
C1-Naphthalenes			122	1.57 (S)		
Biphenyl	92-52-4		124	1.32 (S)	0.29	1.006
C1-Biphenyls			49.0	1.09 (S)		
C2-Biphenyls			93.0	0.971 (S)		
C2-Naphthalenes			396	2.32 (S)		
1,2-Dimethylnaphthalene	573-98-8		40.7	2.32 (S)	1.17	1.081

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This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		47.8	1.77 (S)	0.61	1.011
C3-Naphthalenes			1290	1.78 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		180	1.82 (S)	0.90	1.202
2,3,5-Trimethylnaphthalene	2245-38-7		319	1.75 (S)	1.01	1.222
C4-Naphthalenes			1580	2.10 (S)		
C1-Acenaphthenes			3.17	1.89 (S)		
C1-Fluorenes			431	1.40 (S)		
1,7-Dimethylfluorene	442-66-0		110	2.60 (S)	0.06	1.033
C2-Fluorenes			1200	2.60 (S)		
C3-Fluorenes			989	2.43 (S)		
Dibenzothiophene	132-65-0	NDR	17.5	1.04 (S)	0.12	1.003
C1-Dibenzothiophenes		ND		1.84 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	NDR	8.44	1.84 (S)	1.25	1.094
C2-Dibenzothiophenes			173	1.64 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	14.8	1.64 (S)	0.89	1.163
4,6-Dimethyldibenzothiophene	1207-12-1		21.9	1.31 (S)	0.14	1.152
C3-Dibenzothiophenes			164	1.75 (S)		
C4-Dibenzothiophenes			79.9	2.13 (S)		
3-Methylphenanthrene	832-71-3		226	1.97 (S)	0.60	1.087
2-Methylphenanthrene	2531-84-2		533	1.91 (S)	0.57	1.092
2-Methylanthracene	613-12-7		13.6	2.08 (S)	0.52	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		405	1.97 (S)	0.63	1.106
1-Methylphenanthrene	832-69-9		954	1.93 (S)	0.60	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	124	2.25 (S)	1.19	1.164
2,6-Dimethylphenanthrene	17980-16-4		60.1	2.32 (S)	0.36	1.171
1,7-Dimethylphenanthrene	483-87-4		1810	2.39 (S)	0.31	1.192
1,8-Dimethylphenanthrene	7372-87-4		109	2.32 (S)	0.30	1.209
C3-Phenanthrenes/Anthracenes			1320	2.22 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		94.0	2.22 (S)	0.49	1.291
Retene	483-65-8		7910	3.25 (S)	1.49	1.301
C4-Phenanthrenes/Anthracenes			8820	3.25 (S)		
C1-Fluoranthenes/Pyrenes			431	1.83 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	NDR	264	1.83 (S)	1.35	1.300
C2-Fluoranthenes/Pyrenes			183	1.80 (S)		
C3-Fluoranthenes/Pyrenes			64.0	1.29 (S)		
C4-Fluoranthenes/Pyrenes			10.7	1.23 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			40.6	0.848 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		3.12	0.891 (S)		1.066
1-Methylchrysene	3351-28-8		7.03	0.808 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			18.3	1.03 (S)		
5,9-Dimethylchrysene	139493-40-6		2.86	1.03 (S)		1.127
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.32 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		0.949 (S)		
C1-Benzofluoranthenes/Benzopyrenes			7.39	2.02 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.02 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		3.61 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		140	2.10 (S)	0.03	1.376
Anthracene d-10			2260	0.690 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		13800	0.629 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2620	0.967 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-4_Form1A_PH5H1336.D_SJ3582420.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-01 17-SEP-24
Sample Collection:
17-Sep-2024 13:39

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-4
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	18-Mar-2025 **Time:** 16:19:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1336.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1329.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1500	37.5	0.09	0.610
2-Methylnaphthalene d-10		4040	1810	44.7	0.19	0.756
Biphenyl d-10		4010	1960	48.9		0.868
2,6-Dimethylnaphthalene d-12		4020	2050	50.9	0.65	0.896
Acenaphthylene d-8		4020	2090	52.0	0.16	0.961
Dibenzothiophene d-8		4010	2630	65.6	0.08	0.792
Phenanthrene d-10		4010	2760	68.9	0.14	0.808
Benzo[a]anthracene d-12		4000	3420	85.5	0.22	1.164
Chrysene d-12		3220	2760	85.8	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3450	86.4	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3350	85.8	0.18	0.961
Benzo[a]pyrene d-12		4010	3430	85.4	0.19	1.008
Perylene d-12		4000	3400	85.0	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3220	81.0	0.17	1.205
Benzo[ghi]perylene d-12		3980	3260	81.9	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-4_Form2_PH5H1336.D_SJ3582420.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-02 17-SEP-24
Sample Collection:
17-Sep-2024 13:39

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-5
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	18-Mar-2025 **Time:** 17:09:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1337.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
		Cal. Ver. Data Filename:	PH5H1329.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		65.6	1.08 (S)	0.07	1.006
Acenaphthylene	208-96-8		9.00	0.790 (S)	0.21	1.003
Acenaphthene	83-32-9		23.6	1.38 (S)	1.07	1.047
2-Methylfluorene	1430-97-3		91.3	1.91 (S)	1.03	0.939
C2 Phenanthrenes/Anthracenes			1710	1.72 (S)		
Fluorene	86-73-7		85.0	1.29 (S)	0.97	0.844
Phenanthrene	85-01-8		980	0.729 (S)	0.19	1.004
Anthracene	120-12-7		18.6	0.720 (S)	0.19	1.011
C1 Phenanthrenes/Anthracenes			1500	1.22 (S)		
Fluoranthene	206-44-0		349	1.17 (S)	0.19	1.204
Pyrene	129-00-0		183	1.14 (S)	0.19	1.240
Benz[a]anthracene [3]	56-55-3	NDR	6.11	0.498 (S)	0.43	1.002
Chrysene [4]	218-01-9		69.8	0.556 (S)	0.29	1.002
Benzo[b]fluoranthene	205-99-2		5.72	0.667 (S)	0.23	1.004
Benzo[j,k]fluoranthenes		NDR	1.25	0.675 (S)	0.41	1.002
Benzo[e]pyrene	192-97-2		11.6	0.901 (S)	0.24	0.996
Benzo[a]pyrene	50-32-8	NDR	1.31	0.845 (S)	0.29	1.003
Perylene	198-55-0		37.6	0.920 (S)	0.22	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.825 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	1.59	0.827 (S)	3.20	1.003
Benzo[ghi]perylene	191-24-2		4.06	0.871 (S)	0.25	1.002
2-Methylnaphthalene	91-57-6		48.2	1.82 (S)	0.93	1.008
1-Methylnaphthalene	90-12-0		51.4	2.01 (S)	0.93	1.040
C1-Naphthalenes			99.6	1.82 (S)		
Biphenyl	92-52-4		77.2	1.12 (S)	0.29	1.005
C1-Biphenyls			38.8	0.931 (S)		
C2-Biphenyls			71.1	1.32 (S)		
C2-Naphthalenes			329	2.07 (S)		
1,2-Dimethylnaphthalene	573-98-8		33.0	2.07 (S)	1.03	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		41.8	1.58 (S)	0.69	1.011
C3-Naphthalenes			981	2.84 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		147	2.89 (S)	0.90	1.203
2,3,5-Trimethylnaphthalene	2245-38-7	NDR	244	2.79 (S)	1.03	1.223
C4-Naphthalenes			610	2.50 (S)		
C1-Acenaphthenes			2.37	1.42 (S)		
C1-Fluorenes			340	1.91 (S)		
1,7-Dimethylfluorene	442-66-0		50.5	1.67 (S)	0.06	1.033
C2-Fluorenes			811	1.67 (S)		
C3-Fluorenes			597	2.53 (S)		
Dibenzothiophene	132-65-0	NDR	15.9	0.840 (S)	0.20	1.003
C1-Dibenzothiophenes			41.3	1.26 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		9.01	1.26 (S)	0.80	1.095
C2-Dibenzothiophenes			158	1.41 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	11.9	1.41 (S)	0.83	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		17.6	1.13 (S)	0.15	1.152
C3-Dibenzothiophenes			104	1.64 (S)		
C4-Dibenzothiophenes			40.4	1.81 (S)		
3-Methylphenanthrene	832-71-3		170	1.24 (S)	0.60	1.088
2-Methylphenanthrene	2531-84-2		342	1.20 (S)	0.58	1.092
2-Methylanthracene	613-12-7		10.9	1.31 (S)	0.57	1.098
9/4-Methylphenanthrene	883-20-5/832-64-4		301	1.24 (S)	0.62	1.106
1-Methylphenanthrene	832-69-9		675	1.22 (S)	0.57	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	78.9	1.67 (S)	1.11	1.165
2,6-Dimethylphenanthrene	17980-16-4		34.2	1.72 (S)	0.36	1.171
1,7-Dimethylphenanthrene	483-87-4		958	1.77 (S)	0.30	1.193
1,8-Dimethylphenanthrene	7372-87-4		61.0	1.72 (S)	0.37	1.209
C3-Phenanthrenes/Anthracenes			693	1.82 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		51.3	1.82 (S)	0.47	1.292
Retene	483-65-8		4010	4.10 (S)	1.52	1.301
C4-Phenanthrenes/Anthracenes			4490	4.10 (S)		
C1-Fluoranthenes/Pyrenes			268	1.59 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	NDR	150	1.59 (S)	1.34	1.300
C2-Fluoranthenes/Pyrenes			124	1.29 (S)		
C3-Fluoranthenes/Pyrenes			44.2	1.31 (S)		
C4-Fluoranthenes/Pyrenes			6.54	0.703 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			33.2	0.969 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		2.70	1.02 (S)		1.066
1-Methylchrysene	3351-28-8		5.35	0.924 (S)		1.074
C2-Benzo[a]anthracenes/Chrysenes [4]			17.9	0.972 (S)		
5,9-Dimethylchrysene	139493-40-6		2.81	0.972 (S)		1.127
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.17 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		0.972 (S)		
C1-Benzofluoranthenes/Benzopyrenes			5.87	2.22 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.22 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		1.68 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		92.2	2.50 (S)	0.03	1.376
Anthracene d-10			2850	0.760 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		15700	0.866 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2580	1.40 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-5_Form1A_PH5H1337.D_SJ3582528.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-02 17-SEP-24
Sample Collection:
17-Sep-2024 13:39

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-5
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	18-Mar-2025 **Time:** 17:09:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1337.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1329.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1330	33.2	0.09	0.611
2-Methylnaphthalene d-10		4040	1790	44.3	0.19	0.757
Biphenyl d-10		4010	2000	50.0		0.869
2,6-Dimethylnaphthalene d-12		4020	2110	52.5	0.65	0.896
Acenaphthylene d-8		4020	2160	53.7	0.16	0.962
Dibenzothiophene d-8		4010	2720	67.9	0.08	0.792
Phenanthrene d-10		4010	2890	72.0	0.14	0.808
Benzo[a]anthracene d-12		4000	3430	85.8	0.22	1.164
Chrysene d-12		3220	2750	85.6	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3450	86.6	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3360	86.0	0.18	0.961
Benzo[a]pyrene d-12		4010	3410	84.9	0.19	1.008
Perylene d-12		4000	3380	84.6	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3230	81.4	0.17	1.205
Benzo[ghi]perylene d-12		3980	3250	81.5	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-5_Form2_PH5H1337.D_SJ3582528.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-03 13-SEP-24
Sample Collection:
13-Sep-2024 11:23

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-6
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	18-Mar-2025 **Time:** 17:58:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1338.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
		Cal. Ver. Data Filename:	PH5H1329.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		57.5	1.02 (S)	0.07	1.006
Acenaphthylene	208-96-8		7.55	0.514 (S)	0.22	1.003
Acenaphthene	83-32-9		21.7	1.18 (S)	1.06	1.047
2-Methylfluorene	1430-97-3		97.6	1.48 (S)	1.10	0.939
C2 Phenanthrenes/Anthracenes			1640	1.86 (S)		
Fluorene	86-73-7		94.5	1.42 (S)	0.95	0.844
Phenanthrene	85-01-8		987	1.09 (S)	0.19	1.004
Anthracene	120-12-7		18.8	1.08 (S)	0.19	1.011
C1 Phenanthrenes/Anthracenes			1500	0.848 (S)		
Fluoranthene	206-44-0		330	1.09 (S)	0.20	1.204
Pyrene	129-00-0	NDR	167	1.06 (S)	0.40	1.240
Benz[a]anthracene [3]	56-55-3	NDR	5.99	0.706 (S)	0.34	1.002
Chrysene [4]	218-01-9		69.1	0.708 (S)	0.31	1.002
Benzo[b]fluoranthene	205-99-2		5.24	0.737 (S)	0.22	1.004
Benzo[j,k]fluoranthenes		NDR	0.951	0.734 (S)	1.00	1.002
Benzo[e]pyrene	192-97-2		10.5	0.995 (S)	0.19	0.995
Benzo[a]pyrene	50-32-8	NDR	1.26	0.933 (S)	0.08	1.004
Perylene	198-55-0		36.2	1.05 (S)	0.24	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.873 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	1.46	0.806 (S)	2.91	1.004
Benzo[ghi]perylene	191-24-2		3.95	0.805 (S)	0.20	1.002
2-Methylnaphthalene	91-57-6		38.5	1.39 (S)	0.92	1.009
1-Methylnaphthalene	90-12-0		45.9	1.53 (S)	0.89	1.040
C1-Naphthalenes			84.4	1.39 (S)		
Biphenyl	92-52-4		74.4	0.806 (S)	0.28	1.005
C1-Biphenyls			38.8	1.10 (S)		
C2-Biphenyls			73.7	0.806 (S)		
C2-Naphthalenes			336	1.60 (S)		
1,2-Dimethylnaphthalene	573-98-8		34.8	1.60 (S)	1.07	1.081

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		40.3	1.22 (S)	0.74	1.011
C3-Naphthalenes			996	1.56 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		161	1.59 (S)	0.85	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		236	1.54 (S)	1.02	1.223
C4-Naphthalenes			1070	1.84 (S)		
C1-Acenaphthenes			1.81	1.43 (S)		
C1-Fluorenes			361	1.48 (S)		
1,7-Dimethylfluorene	442-66-0		65.2	1.92 (S)	0.06	1.034
C2-Fluorenes			882	1.92 (S)		
C3-Fluorenes			608	1.92 (S)		
Dibenzothiophene	132-65-0	NDR	23.9	0.890 (S)	0.16	1.003
C1-Dibenzothiophenes			58.1	1.03 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	NDR	21.3	1.03 (S)	0.87	1.094
C2-Dibenzothiophenes			275	1.45 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	20.3	1.45 (S)	0.75	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		35.9	1.16 (S)	0.17	1.152
C3-Dibenzothiophenes			187	1.73 (S)		
C4-Dibenzothiophenes			65.5	1.64 (S)		
3-Methylphenanthrene	832-71-3		169	0.866 (S)	0.60	1.088
2-Methylphenanthrene	2531-84-2		348	0.838 (S)	0.57	1.092
2-Methylanthracene	613-12-7		9.09	0.914 (S)	0.58	1.098
9/4-Methylphenanthrene	883-20-5/832-64-4		300	0.866 (S)	0.61	1.106
1-Methylphenanthrene	832-69-9		671	0.848 (S)	0.57	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	76.6	1.81 (S)	1.18	1.165
2,6-Dimethylphenanthrene	17980-16-4		46.7	1.86 (S)	0.35	1.171
1,7-Dimethylphenanthrene	483-87-4		867	1.92 (S)	0.30	1.193
1,8-Dimethylphenanthrene	7372-87-4		69.6	1.86 (S)	0.31	1.209
C3-Phenanthrenes/Anthracenes			642	1.66 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		44.7	1.66 (S)	0.49	1.292
Retene	483-65-8		3430	3.75 (S)	1.51	1.301
C4-Phenanthrenes/Anthracenes			3940	3.75 (S)		
C1-Fluoranthenes/Pyrenes			249	1.31 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	NDR	137	1.31 (S)	1.30	1.301
C2-Fluoranthenes/Pyrenes			114	0.784 (S)		
C3-Fluoranthenes/Pyrenes			41.8	1.22 (S)		
C4-Fluoranthenes/Pyrenes			10.9	0.784 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			32.7	0.643 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		2.47	0.677 (S)		1.065
1-Methylchrysene	3351-28-8		4.77	0.613 (S)		1.074
C2-Benzo[a]anthracenes/Chrysenes [4]			17.4	1.10 (S)		
5,9-Dimethylchrysene	139493-40-6		3.26	1.10 (S)		1.126
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.41 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		0.783 (S)		
C1-Benzofluoranthenes/Benzopyrenes			6.82	2.20 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		2.20 (S)		
C2-Benzofluoranthenes/Benzopyrenes			3.15	2.35 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		95.0	1.84 (S)	0.03	1.376
Anthracene d-10			2860	0.657 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		15500	0.448 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2610	1.56 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-6_Form1A_PH5H1338.D_SJ3582421.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-03 13-SEP-24
Sample Collection:
13-Sep-2024 11:23

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-6
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	18-Mar-2025 **Time:** 17:58:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1338.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1329.D

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This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1840	45.8	0.09	0.610
2-Methylnaphthalene d-10		4040	2260	55.9	0.19	0.756
Biphenyl d-10		4010	2460	61.4		0.869
2,6-Dimethylnaphthalene d-12		4020	2570	63.9	0.66	0.896
Acenaphthylene d-8		4020	2620	65.2	0.16	0.961
Dibenzothiophene d-8		4010	3010	75.0	0.08	0.792
Phenanthrene d-10		4010	3120	77.8	0.14	0.808
Benzo[a]anthracene d-12		4000	3460	86.6	0.22	1.164
Chrysene d-12		3220	2790	86.8	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3560	89.3	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3450	88.3	0.18	0.961
Benzo[a]pyrene d-12		4010	3510	87.6	0.18	1.009
Perylene d-12		4000	3510	87.7	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3340	84.1	0.17	1.205
Benzo[ghi]perylene d-12		3980	3350	84.3	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

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Report Filename: PAH_PAH_LO_LPAHF_L42283-6_Form2_PH5H1338.D_SJ3582421.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-US-04 13-SEP-24
Sample Collection:
13-Sep-2024 14:21

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-7
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	18-Mar-2025 **Time:** 23:35:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1346.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

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This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		32.4	1.23 (S)	0.07	1.006
Acenaphthylene	208-96-8		0.865	0.680 (S)	0.24	1.003
Acenaphthene	83-32-9		13.7	1.01 (S)	1.09	1.048
2-Methylfluorene	1430-97-3		19.6	1.45 (S)	1.05	0.939
C2 Phenanthrenes/Anthracenes			1490	1.74 (S)		
Fluorene	86-73-7		15.7	1.09 (S)	1.10	0.844
Phenanthrene	85-01-8		207	1.41 (S)	0.19	1.004
Anthracene	120-12-7	NDR	2.12	1.40 (S)	0.63	1.012
C1 Phenanthrenes/Anthracenes			623	1.38 (S)		
Fluoranthene	206-44-0		39.9	0.700 (S)	0.21	1.204
Pyrene	129-00-0	NDR	48.2	0.681 (S)	0.85	1.240
Benz[a]anthracene [3]	56-55-3		7.65	0.905 (S)	0.30	1.002
Chrysene [4]	218-01-9		83.2	0.898 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		4.74	1.35 (S)	0.24	1.004
Benzo[j,k]fluoranthenes		NDR	1.75	1.37 (S)	0.15	1.001
Benzo[e]pyrene	192-97-2		12.9	1.77 (S)	0.20	0.996
Benzo[a]pyrene	50-32-8	ND		1.66 (S)		
Perylene	198-55-0	NDR	3.17	1.88 (S)	0.44	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.02 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.18 (S)		
Benzo[ghi]perylene	191-24-2	NDR	3.02	1.20 (S)	0.32	1.002
2-Methylnaphthalene	91-57-6		20.9	1.30 (S)	0.95	1.009
1-Methylnaphthalene	90-12-0		22.1	1.43 (S)	0.94	1.040
C1-Naphthalenes			43.1	1.30 (S)		
Biphenyl	92-52-4		19.9	1.02 (S)	0.30	1.005
C1-Biphenyls			16.9	0.787 (S)		
C2-Biphenyls			44.5	1.11 (S)		
C2-Naphthalenes			265	1.41 (S)		
1,2-Dimethylnaphthalene	573-98-8		18.5	1.41 (S)	1.26	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		39.4	1.07 (S)	0.77	1.011
C3-Naphthalenes			1040	1.65 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		301	1.68 (S)	0.89	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		197	1.62 (S)	0.96	1.225
C4-Naphthalenes			1790	3.31 (S)		
C1-Acenaphthenes			1.36	0.898 (S)		
C1-Fluorenes			104	1.45 (S)		
1,7-Dimethylfluorene	442-66-0		31.6	1.72 (S)	0.08	1.034
C2-Fluorenes			496	1.72 (S)		
C3-Fluorenes			903	2.20 (S)		
Dibenzothiophene	132-65-0	NDR	16.8	1.26 (S)	0.17	1.003
C1-Dibenzothiophenes			181	1.14 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		48.0	1.14 (S)	0.73	1.094
C2-Dibenzothiophenes			1030	1.94 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	84.0	1.94 (S)	0.67	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		167	1.56 (S)	0.14	1.152
C3-Dibenzothiophenes			1000	2.22 (S)		
C4-Dibenzothiophenes			483	1.94 (S)		
3-Methylphenanthrene	832-71-3		106	1.41 (S)	0.65	1.087
2-Methylphenanthrene	2531-84-2		134	1.36 (S)	0.56	1.092
2-Methylanthracene	613-12-7	ND		1.48 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		212	1.41 (S)	0.59	1.106
1-Methylphenanthrene	832-69-9		171	1.38 (S)	0.64	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	89.4	1.68 (S)	0.89	1.165
2,6-Dimethylphenanthrene	17980-16-4		77.4	1.74 (S)	0.32	1.171
1,7-Dimethylphenanthrene	483-87-4		265	1.79 (S)	0.32	1.193
1,8-Dimethylphenanthrene	7372-87-4		61.2	1.74 (S)	0.38	1.209
C3-Phenanthrenes/Anthracenes			1350	1.49 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		71.1	1.49 (S)	0.63	1.292
Retene	483-65-8		417	3.70 (S)	1.36	1.301
C4-Phenanthrenes/Anthracenes			2680	3.70 (S)		
C1-Fluoranthenes/Pyrenes			198	1.11 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		55.1	1.11 (S)	0.95	1.301
C2-Fluoranthenes/Pyrenes			342	1.21 (S)		
C3-Fluoranthenes/Pyrenes			304	1.02 (S)		
C4-Fluoranthenes/Pyrenes			101	1.06 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			131	1.02 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		15.8	1.07 (S)		1.066
1-Methylchrysene	3351-28-8		15.7	0.969 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			103	1.60 (S)		
5,9-Dimethylchrysene	139493-40-6		24.8	1.60 (S)		1.127
C3-Benzo[a]anthracenes/Chrysenes [4]			30.2	1.36 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		1.25 (S)		
C1-Benzofluoranthenes/Benzopyrenes			21.3	1.93 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		3.01	1.93 (S)		1.108
C2-Benzofluoranthenes/Benzopyrenes			12.2	1.31 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	NDR	242	3.31 (S)	0.03	1.376
Anthracene d-10			4430	0.546 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		18500	1.28 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2590	1.29 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-7_Form1A_PH5H1346.D_SJ3582477.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-US-04 13-SEP-24
Sample Collection:
13-Sep-2024 14:21

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-7
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	18-Mar-2025 **Time:** 23:35:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1346.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1343.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1250	31.3	0.09	0.610
2-Methylnaphthalene d-10		4040	1730	42.8	0.19	0.756
Biphenyl d-10		4010	2000	49.9		0.869
2,6-Dimethylnaphthalene d-12		4020	2120	52.8	0.65	0.896
Acenaphthylene d-8		4020	2220	55.2	0.16	0.961
Dibenzothiophene d-8		4010	2780	69.3	0.08	0.792
Phenanthrene d-10		4010	2930	73.1	0.14	0.808
Benzo[a]anthracene d-12		4000	3370	84.3	0.22	1.164
Chrysene d-12		3220	2700	84.0	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3450	86.4	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3190	81.5	0.18	0.961
Benzo[a]pyrene d-12		4010	3330	83.2	0.18	1.008
Perylene d-12		4000	3310	82.8	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3220	81.1	0.17	1.204
Benzo[ghi]perylene d-12		3980	3200	80.4	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-7_Form2_PH5H1346.D_SJ3582477.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-US-05 12-SEP-24
Sample Collection:
12-Sep-2024 16:00

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-8
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 00:24:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1347.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		29.9	1.11 (S)	0.07	1.006
Acenaphthylene	208-96-8	ND		0.752 (S)		
Acenaphthene	83-32-9		17.6	1.54 (S)	1.24	1.048
2-Methylfluorene	1430-97-3	NDR	16.3	0.461 (S)	0.86	0.939
C2 Phenanthrenes/Anthracenes			802	1.63 (S)		
Fluorene	86-73-7		16.7	1.04 (S)	0.99	0.844
Phenanthrene	85-01-8		207	1.10 (S)	0.19	1.004
Anthracene	120-12-7	ND		1.09 (S)		
C1 Phenanthrenes/Anthracenes			424	1.84 (S)		
Fluoranthene	206-44-0		38.4	1.05 (S)	0.20	1.204
Pyrene	129-00-0	NDR	35.4	1.02 (S)	1.10	1.240
Benz[a]anthracene [3]	56-55-3		4.93	1.90 (S)	0.28	1.002
Chrysene [4]	218-01-9		48.4	2.14 (S)	0.31	1.002
Benzo[b]fluoranthene	205-99-2		2.20	0.826 (S)	0.25	1.004
Benzo[j,k]fluoranthenes		ND		0.871 (S)		
Benzo[e]pyrene	192-97-2		8.51	1.16 (S)	0.18	0.995
Benzo[a]pyrene	50-32-8	NDR	1.27	1.09 (S)	0.32	1.004
Perylene	198-55-0		3.64	1.21 (S)	0.24	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.615 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	1.27	0.777 (S)	4.88	1.003
Benzo[ghi]perylene	191-24-2		2.04	0.801 (S)	0.28	1.002
2-Methylnaphthalene	91-57-6		20.3	0.915 (S)	0.97	1.008
1-Methylnaphthalene	90-12-0		18.6	1.01 (S)	0.94	1.040
C1-Naphthalenes			38.8	0.915 (S)		
Biphenyl	92-52-4		19.9	0.790 (S)	0.25	1.006
C1-Biphenyls			14.4	1.00 (S)		
C2-Biphenyls			31.0	0.942 (S)		
C2-Naphthalenes			190	2.12 (S)		
1,2-Dimethylnaphthalene	573-98-8		13.1	2.12 (S)	1.13	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		25.3	1.61 (S)	0.70	1.010
C3-Naphthalenes			552	1.26 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		149	1.28 (S)	0.87	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		103	1.24 (S)	1.01	1.224
C4-Naphthalenes			836	2.45 (S)		
C1-Acenaphthenes		ND		1.62 (S)		
C1-Fluorenes			69.8	0.461 (S)		
1,7-Dimethylfluorene	442-66-0		17.9	1.86 (S)	0.08	1.034
C2-Fluorenes			266	1.86 (S)		
C3-Fluorenes			478	2.60 (S)		
Dibenzothiophene	132-65-0	NDR	9.84	1.11 (S)	0.17	1.003
C1-Dibenzothiophenes			83.4	1.23 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		22.8	1.23 (S)	0.73	1.094
C2-Dibenzothiophenes			468	1.70 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	40.6	1.70 (S)	0.70	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		78.3	1.36 (S)	0.16	1.152
C3-Dibenzothiophenes			508	2.74 (S)		
C4-Dibenzothiophenes			255	2.31 (S)		
3-Methylphenanthrene	832-71-3		71.6	1.88 (S)	0.62	1.087
2-Methylphenanthrene	2531-84-2		89.2	1.82 (S)	0.62	1.092
2-Methylanthracene	613-12-7	ND		1.98 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4		137	1.88 (S)	0.59	1.106
1-Methylphenanthrene	832-69-9		126	1.84 (S)	0.61	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	49.3	1.58 (S)	0.89	1.165
2,6-Dimethylphenanthrene	17980-16-4		31.7	1.63 (S)	0.33	1.171
1,7-Dimethylphenanthrene	483-87-4		160	1.68 (S)	0.32	1.193
1,8-Dimethylphenanthrene	7372-87-4	NDR	32.8	1.63 (S)	0.26	1.209
C3-Phenanthrenes/Anthracenes			679	1.83 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		34.7	1.83 (S)	0.64	1.292
Retene	483-65-8		375	4.35 (S)	1.37	1.301
C4-Phenanthrenes/Anthracenes			1440	4.35 (S)		
C1-Fluoranthenes/Pyrenes			89.7	1.54 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		34.4	1.54 (S)	1.08	1.300
C2-Fluoranthenes/Pyrenes			181	1.49 (S)		
C3-Fluoranthenes/Pyrenes			148	1.16 (S)		
C4-Fluoranthenes/Pyrenes			54.7	1.43 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			59.3	0.592 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		7.24	0.623 (S)		1.066
1-Methylchrysene	3351-28-8		8.66	0.565 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			62.5	1.14 (S)		
5,9-Dimethylchrysene	139493-40-6		14.3	1.14 (S)		1.127
C3-Benzo[a]anthracenes/Chrysenes [4]			19.5	1.38 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		1.18 (S)		
C1-Benzofluoranthenes/Benzopyrenes			14.1	1.12 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		2.13	1.12 (S)		1.108
C2-Benzofluoranthenes/Benzopyrenes			7.93	1.12 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		104	2.45 (S)	0.03	1.376
Anthracene d-10		NDR	5290	0.790 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		18900	1.13 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2610	1.38 (S)	0.24	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-8_Form1A_PH5H1347.D_SJ3582478.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-US-05 12-SEP-24
Sample Collection:
12-Sep-2024 16:00

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-8
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	19-Mar-2025 **Time:** 00:24:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1347.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1343.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1510	37.6	0.09	0.610
2-Methylnaphthalene d-10		4040	1870	46.3	0.19	0.757
Biphenyl d-10		4010	2090	52.1		0.869
2,6-Dimethylnaphthalene d-12		4020	2180	54.2	0.66	0.896
Acenaphthylene d-8		4020	2250	56.0	0.16	0.961
Dibenzothiophene d-8		4010	2690	67.0	0.08	0.792
Phenanthrene d-10		4010	2820	70.3	0.14	0.808
Benzo[a]anthracene d-12		4000	3420	85.6	0.22	1.164
Chrysene d-12		3220	2730	84.7	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3420	85.8	0.18	0.957
Benzo[k]fluoranthene d-12		3910	3300	84.5	0.18	0.961
Benzo[a]pyrene d-12		4010	3360	83.7	0.18	1.008
Perylene d-12		4000	3320	82.9	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3230	81.3	0.17	1.204
Benzo[ghi]perylene d-12		3980	3210	80.7	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

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Report Filename: PAH_PAH_LO_LPAHF_L42283-8_Form2_PH5H1347.D_SJ3582478.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-01 13-SEP-24
Sample Collection:
13-Sep-2024 12:10

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-9
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 01:14:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1348.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		43.3	0.727 (S)	0.07	1.007
Acenaphthylene	208-96-8		2.57	0.719 (S)	0.21	1.003
Acenaphthene	83-32-9		59.4	1.26 (S)	1.11	1.047
2-Methylfluorene	1430-97-3		82.5	1.73 (S)	1.17	0.939
C2 Phenanthrenes/Anthracenes			1460	1.60 (S)		
Fluorene	86-73-7		73.2	1.13 (S)	0.98	0.844
Phenanthrene	85-01-8		484	1.01 (S)	0.18	1.004
Anthracene	120-12-7	NDR	32.9	0.994 (S)	0.22	1.011
C1 Phenanthrenes/Anthracenes			608	1.34 (S)		
Fluoranthene	206-44-0		1110	1.12 (S)	0.20	1.204
Pyrene	129-00-0		931	1.09 (S)	0.22	1.240
Benz[a]anthracene [3]	56-55-3		90.5	0.747 (S)	0.26	1.002
Chrysene [4]	218-01-9		203	0.777 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		31.0	0.757 (S)	0.19	1.004
Benzo[j,k]fluoranthenes			20.8	0.752 (S)	0.19	1.002
Benzo[e]pyrene	192-97-2		30.4	1.02 (S)	0.21	0.996
Benzo[a]pyrene	50-32-8		11.2	0.954 (S)	0.20	1.004
Perylene	198-55-0		8.08	1.06 (S)	0.21	1.004
Dibenz[a,h]anthracene [5]	53-70-3	NDR	1.12	0.692 (S)	0.35	1.007
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	2.53	0.895 (S)	1.97	1.002
Benzo[ghi]perylene	191-24-2	NDR	3.51	0.917 (S)	0.38	1.002
2-Methylnaphthalene	91-57-6		38.3	0.909 (S)	0.99	1.008
1-Methylnaphthalene	90-12-0		44.7	1.00 (S)	0.92	1.039
C1-Naphthalenes			83.0	0.909 (S)		
Biphenyl	92-52-4		25.6	0.617 (S)	0.27	1.005
C1-Biphenyls			21.7	0.640 (S)		
C2-Biphenyls			64.8	0.845 (S)		
C2-Naphthalenes			575	1.91 (S)		
1,2-Dimethylnaphthalene	573-98-8		73.6	1.91 (S)	1.35	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		83.6	1.46 (S)	0.68	1.011
C3-Naphthalenes			1720	1.80 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		244	1.83 (S)	0.94	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		238	1.77 (S)	1.02	1.228
C4-Naphthalenes			3260	2.10 (S)		
C1-Acenaphthenes			20.2	1.03 (S)		
C1-Fluorenes			451	1.73 (S)		
1,7-Dimethylfluorene	442-66-0		116	1.87 (S)	0.09	1.034
C2-Fluorenes			1530	1.87 (S)		
C3-Fluorenes			1540	2.61 (S)		
Dibenzothiophene	132-65-0	NDR	36.9	0.837 (S)	0.27	1.003
C1-Dibenzothiophenes			393	0.837 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		128	0.837 (S)	0.72	1.094
C2-Dibenzothiophenes			1600	1.99 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	166	1.99 (S)	0.70	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		252	1.60 (S)	0.15	1.153
C3-Dibenzothiophenes			971	1.90 (S)		
C4-Dibenzothiophenes			355	2.23 (S)		
3-Methylphenanthrene	832-71-3		128	1.37 (S)	0.63	1.088
2-Methylphenanthrene	2531-84-2		149	1.32 (S)	0.59	1.092
2-Methylanthracene	613-12-7		7.66	1.44 (S)	0.54	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		173	1.37 (S)	0.66	1.106
1-Methylphenanthrene	832-69-9		150	1.34 (S)	0.66	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	125	1.56 (S)	0.79	1.165
2,6-Dimethylphenanthrene	17980-16-4		69.6	1.60 (S)	0.33	1.171
1,7-Dimethylphenanthrene	483-87-4		174	1.66 (S)	0.33	1.193
1,8-Dimethylphenanthrene	7372-87-4		74.5	1.60 (S)	0.33	1.209
C3-Phenanthrenes/Anthracenes			1130	2.01 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		65.9	2.01 (S)	0.56	1.292
Retene	483-65-8		352	10.2 (S)	1.33	1.301
C4-Phenanthrenes/Anthracenes			2000	10.2 (S)		
C1-Fluoranthenes/Pyrenes			469	1.42 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		159	1.42 (S)	0.94	1.301
C2-Fluoranthenes/Pyrenes			446	1.42 (S)		
C3-Fluoranthenes/Pyrenes			246	1.40 (S)		
C4-Fluoranthenes/Pyrenes			95.1	0.893 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			176	0.818 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		15.2	0.861 (S)		1.066
1-Methylchrysene	3351-28-8		18.1	0.780 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			122	1.43 (S)		
5,9-Dimethylchrysene	139493-40-6		21.4	1.43 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			34.0	1.32 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		1.06 (S)		
C1-Benzofluoranthenes/Benzopyrenes			13.3	1.72 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		2.59	1.72 (S)		1.108
C2-Benzofluoranthenes/Benzopyrenes			5.44	1.50 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		645	2.10 (S)	0.03	1.375
Anthracene d-10			6480	0.770 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		20600	0.834 (S)	0.16	0.835
Dibenzo[a,h]anthracene d-14	13250-98-1		2540	1.05 (S)	0.24	1.003

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-9_Form1A_PH5H1348.D_SJ3582479.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-01 13-SEP-24
Sample Collection:
13-Sep-2024 12:10

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-9
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 01:14:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1348.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D
Concentration Units:	ng absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	2190	54.5	0.09	0.611
2-Methylnaphthalene d-10		4040	2560	63.4	0.19	0.757
Biphenyl d-10		4010	2670	66.5		0.869
2,6-Dimethylnaphthalene d-12		4020	2720	67.8	0.66	0.896
Acenaphthylene d-8		4020	2750	68.4	0.16	0.961
Dibenzothiophene d-8		4010	2840	70.8	0.08	0.792
Phenanthrene d-10		4010	2980	74.4	0.14	0.808
Benzo[a]anthracene d-12		4000	3490	87.2	0.22	1.164
Chrysene d-12		3220	2780	86.3	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3520	88.1	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3420	87.6	0.18	0.961
Benzo[a]pyrene d-12		4010	3450	86.0	0.19	1.008
Perylene d-12		4000	3450	86.3	0.22	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3320	83.6	0.17	1.205
Benzo[ghi]perylene d-12		3980	3310	83.3	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-9_Form2_PH5H1348.D_SJ3582479.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-02 12-SEP-24
Sample Collection:
12-Sep-2024 10:03

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-10
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 02:03:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1349.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		136	1.31 (S)	0.06	1.007
Acenaphthylene	208-96-8		7.75	2.10 (S)	0.21	1.002
Acenaphthene	83-32-9		87.5	3.84 (S)	1.34	1.047
2-Methylfluorene	1430-97-3		1850	15.7 (S)	1.23	0.939
C2 Phenanthrenes/Anthracenes		X				
Fluorene	86-73-7		867	4.72 (S)	1.09	0.843
Phenanthrene	85-01-8	OLR				
Anthracene	120-12-7	NDR	104	100 (S)	1.02	1.012
C1 Phenanthrenes/Anthracenes		X				
Fluoranthene	206-44-0		420	51.7 (S)	0.17	1.205
Pyrene	129-00-0		1160	50.4 (S)	0.20	1.241
Benz[a]anthracene [3]	56-55-3	NDR	147	11.1 (S)	0.39	1.002
Chrysene [4]	218-01-9		2900	12.0 (S)	0.31	1.002
Benzo[b]fluoranthene	205-99-2		98.2	8.36 (S)	0.25	1.004
Benzo[j,k]fluoranthenes		NDR	15.6	8.23 (S)	0.46	1.001
Benzo[e]pyrene	192-97-2		314	11.0 (S)	0.23	0.996
Benzo[a]pyrene	50-32-8		16.7	10.3 (S)	0.24	1.004
Perylene	198-55-0		70.8	11.4 (S)	0.18	1.004
Dibenz[a,h]anthracene [5]	53-70-3	NDR	12.2	3.93 (S)	0.23	1.006
Indeno[1,2,3-cd]pyrene	193-39-5	ND		4.86 (S)		
Benzo[ghi]perylene	191-24-2		53.4	5.96 (S)	0.23	1.002
2-Methylnaphthalene	91-57-6		1060	2.04 (S)	0.89	1.008
1-Methylnaphthalene	90-12-0		1060	2.24 (S)	0.91	1.039
C1-Naphthalenes			2110	2.04 (S)		
Biphenyl	92-52-4		206	1.05 (S)	0.28	1.005
C1-Biphenyls			1050	2.54 (S)		
C2-Biphenyls			3580	3.70 (S)		
C2-Naphthalenes			18700	3.13 (S)		
1,2-Dimethylnaphthalene	573-98-8		1110	3.13 (S)	1.21	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		3480	2.38 (S)	0.65	1.011
C3-Naphthalenes		X				
2,3,6-Trimethylnaphthalene	829-26-5	OLR				
2,3,5-Trimethylnaphthalene	2245-38-7	OLR				
C4-Naphthalenes		X				
C1-Acenaphthenes			50.7	1.68 (S)		
C1-Fluorenes			5140	15.7 (S)		
1,7-Dimethylfluorene	442-66-0		5100	5.54 (S)	0.06	1.034
C2-Fluorenes			51500	5.54 (S)		
C3-Fluorenes			68600	32.8 (S)		
Dibenzothiophene	132-65-0	NDR	3500	42.2 (S)	0.17	1.003
C1-Dibenzothiophenes		X				
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	OLR				
C2-Dibenzothiophenes		X				
2,4-Dimethyldibenzothiophene	31317-18-7	OLR				
4,6-Dimethyldibenzothiophene	1207-12-1	OLR				
C3-Dibenzothiophenes			47500	43.3 (S)		
C4-Dibenzothiophenes			18300	33.7 (S)		
3-Methylphenanthrene	832-71-3	X				
2-Methylphenanthrene	2531-84-2	OLR				
2-Methylanthracene	613-12-7	X				
9/4-Methylphenanthrene	883-20-5/832-64-4	X				
1-Methylphenanthrene	832-69-9	OLR				
3,6-Dimethylphenanthrene	1576-67-6	OLR				
2,6-Dimethylphenanthrene	17980-16-4	X				
1,7-Dimethylphenanthrene	483-87-4	OLR				
1,8-Dimethylphenanthrene	7372-87-4	X				
C3-Phenanthrenes/Anthracenes			85100	32.0 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		3850	32.0 (S)	0.58	1.292
Retene	483-65-8	NDR	4800	61.1 (S)	0.67	1.302
C4-Phenanthrenes/Anthracenes			99500	61.1 (S)		
C1-Fluoranthenes/Pyrenes			6720	64.0 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		2280	64.0 (S)	1.04	1.302
C2-Fluoranthenes/Pyrenes			11700	22.9 (S)		
C3-Fluoranthenes/Pyrenes			6700	27.1 (S)		
C4-Fluoranthenes/Pyrenes			2600	26.8 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			5990	12.1 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		653	12.7 (S)		1.066
1-Methylchrysene	3351-28-8		742	11.5 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			6240	17.9 (S)		
5,9-Dimethylchrysene	139493-40-6		1300	17.9 (S)		1.127
C3-Benzo[a]anthracenes/Chrysenes [4]			2150	10.2 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			759	9.40 (S)		
C1-Benzofluoranthenes/Benzopyrenes			839	9.08 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		130	9.08 (S)		1.108
C2-Benzofluoranthenes/Benzopyrenes			730	4.88 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	OLR				
Anthracene d-10		NDR	2880	10.9 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		13600	19.2 (S)	0.17	0.835
Dibenzo[a,h]anthracene d-14	13250-98-1		1650	5.65 (S)	0.23	1.003

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-10_Form1A_PH5H1349.D_SJ3582480.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-02 12-SEP-24
Sample Collection:
12-Sep-2024 10:03

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-10
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 02:03:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1349.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D
Concentration Units:	ng absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	2000	49.9	0.09	0.611
2-Methylnaphthalene d-10		4040	2340	57.8	0.19	0.757
Biphenyl d-10		4010	2560	63.9		0.868
2,6-Dimethylnaphthalene d-12		4020	2730	68.0	0.65	0.896
Acenaphthylene d-8		4020	2880	71.5	0.16	0.962
Dibenzothiophene d-8		4010	2970	74.1	0.09	0.791
Phenanthrene d-10		4010	3070	76.5	0.14	0.807
Benzo[a]anthracene d-12		4000	3370	84.3	0.23	1.163
Chrysene d-12		3220	2620	81.5	0.27	1.168
Benzo[b]fluoranthene d-12		3990	3580	89.7	0.18	0.957
Benzo[k]fluoranthene d-12		3910	3290	84.2	0.18	0.961
Benzo[a]pyrene d-12		4010	3400	84.8	0.19	1.008
Perylene d-12		4000	3450	86.4	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3320	83.6	0.18	1.203
Benzo[ghi]perylene d-12		3980	3290	82.7	0.19	1.234

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-10_Form2_PH5H1349.D_SJ3582480.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-02 12-SEP-24
Sample Collection:
12-Sep-2024 10:03

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-10 N
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	26-Mar-2025 **Time:** 00:43:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1504.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	10	**Cal. Ver. Data Filename:**	PH5H1499.D

Concentration Units: ng/sample

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This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3	X				
Acenaphthylene	208-96-8	X				
Acenaphthene	83-32-9	X				
2-Methylfluorene	1430-97-3	X				
C2 Phenanthrenes/Anthracenes		D	131000	66.0 (S)		
Fluorene	86-73-7	X				
Phenanthrene	85-01-8	D	8260	48.7 (S)	0.19	1.004
Anthracene	120-12-7	X				
C1 Phenanthrenes/Anthracenes		D	67500	75.2 (S)		
Fluoranthene	206-44-0	X				
Pyrene	129-00-0	X				
Benz[a]anthracene [3]	56-55-3	X				
Chrysene [4]	218-01-9	X				
Benzo[b]fluoranthene	205-99-2	X				
Benzo[j,k]fluoranthenes		X				
Benzo[e]pyrene	192-97-2	X				
Benzo[a]pyrene	50-32-8	X				
Perylene	198-55-0	X				
Dibenz[a,h]anthracene [5]	53-70-3	X				
Indeno[1,2,3-cd]pyrene	193-39-5	X				
Benzo[ghi]perylene	191-24-2	X				
2-Methylnaphthalene	91-57-6	X				
1-Methylnaphthalene	90-12-0	X				
C1-Naphthalenes		X				
Biphenyl	92-52-4	X				
C1-Biphenyls		X				
C2-Biphenyls		X				
C2-Naphthalenes		X				
1,2-Dimethylnaphthalene	573-98-8	X				

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0	X				
C3-Naphthalenes		D	69900	73.6 (S)		
2,3,6-Trimethylnaphthalene	829-26-5	D	23400	74.9 (S)	0.89	1.203
2,3,5-Trimethylnaphthalene	2245-38-7	D	14400	72.3 (S)	0.94	1.225
C4-Naphthalenes		D	79100	100 (S)		
C1-Acenaphthenes		X				
C1-Fluorenes		X				
1,7-Dimethylfluorene	442-66-0	X				
C2-Fluorenes		X				
C3-Fluorenes		X				
Dibenzothiophene	132-65-0	X				
C1-Dibenzothiophenes		D	27200	31.3 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	D	7480	31.3 (S)	0.68	1.095
C2-Dibenzothiophenes		D	73500	76.9 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR D	5950	76.9 (S)	0.66	1.163
4,6-Dimethyldibenzothiophene	1207-12-1	D	12100	61.7 (S)	0.14	1.152
C3-Dibenzothiophenes		X				
C4-Dibenzothiophenes		X				
3-Methylphenanthrene	832-71-3	D	12800	76.7 (S)	0.60	1.087
2-Methylphenanthrene	2531-84-2	D	16900	74.3 (S)	0.58	1.092
2-Methylanthracene	613-12-7	ND D		81.0 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4	D	22600	76.7 (S)	0.58	1.106
1-Methylphenanthrene	832-69-9	D	15200	75.2 (S)	0.64	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR D	7170	64.0 (S)	0.87	1.165
2,6-Dimethylphenanthrene	17980-16-4	D	8600	66.0 (S)	0.30	1.171
1,7-Dimethylphenanthrene	483-87-4	D	21200	68.1 (S)	0.32	1.193
1,8-Dimethylphenanthrene	7372-87-4	D	4600	66.0 (S)	0.35	1.209
C3-Phenanthrenes/Anthracenes		X				
1,2,6-Trimethylphenanthrene	30436-55-6	X				
Retene	483-65-8	X				
C4-Phenanthrenes/Anthracenes		X				
C1-Fluoranthenes/Pyrenes		X				
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	X				
C2-Fluoranthenes/Pyrenes		X				
C3-Fluoranthenes/Pyrenes		X				
C4-Fluoranthenes/Pyrenes		X				
C1-Benzo[a]anthracenes/Chrysenes [4]		X				
5/6-Methylchrysene	3697-24-3/1705-85-7	X				
1-Methylchrysene	3351-28-8	X				
C2-Benzo[a]anthracenes/Chrysenes [4]		X				
5,9-Dimethylchrysene	139493-40-6	X				
C3-Benzo[a]anthracenes/Chrysenes [4]		X				
C4-Benzo[a]anthracenes/Chrysenes [4]		X				
C1-Benzofluoranthenes/Benzopyrenes		X				
7-Methylbenzo[a]pyrene	63041-77-0	X				
C2-Benzofluoranthenes/Benzopyrenes		X				
1,4,6,7-Tetramethylnaphthalene	13764-18-6	NDR D	8130	100 (S)	0.05	1.376
Anthracene d-10		X				
Fluoranthene d-10	93951-69-0	X				
Dibenzo[a,h]anthracene d-14	13250-98-1	X				

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-10_Form1A_PH5H1504.D_SJ3584917.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-02 12-SEP-24
Sample Collection:
12-Sep-2024 10:03

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-10 N
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	26-Mar-2025 **Time:** 00:43:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1504.D**
Dilution Factor:	10	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1499.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8	X					
2-Methylnaphthalene d-10	X					
Biphenyl d-10	X					
2,6-Dimethylnaphthalene d-12	D	4020	2680	66.6	0.64	0.896
Acenaphthylene d-8	X					
Dibenzothiophene d-8	D	4010	3000	74.9	0.08	0.792
Phenanthrene d-10	D	4010	3080	76.8	0.14	0.808
Benzo[a]anthracene d-12	X					
Chrysene d-12	X					
Benzo[b]fluoranthene d-12	X					
Benzo[k]fluoranthene d-12	X					
Benzo[a]pyrene d-12	X					
Perylene d-12	X					
Indeno[1,2,3-cd]pyrene d-12	X					
Benzo[ghi]perylene d-12	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-10_Form2_PH5H1504.D_SJ3584917.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-04 13-SEP-24
Sample Collection:
13-Sep-2024 10:46

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-11
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 02:53:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1350.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		60.8	0.621 (S)	0.07	1.006
Acenaphthylene	208-96-8		7.26	0.605 (S)	0.24	1.003
Acenaphthene	83-32-9		32.6	1.27 (S)	1.12	1.047
2-Methylfluorene	1430-97-3		266	3.23 (S)	1.17	0.938
C2 Phenanthrenes/Anthracenes			8910	7.54 (S)		
Fluorene	86-73-7		183	2.92 (S)	1.00	0.843
Phenanthrene	85-01-8		1620	13.2 (S)	0.19	1.003
Anthracene	120-12-7	NDR	20.5	13.0 (S)	0.53	1.011
C1 Phenanthrenes/Anthracenes			6420	5.86 (S)		
Fluoranthene	206-44-0		324	8.03 (S)	0.19	1.203
Pyrene	129-00-0		253	7.81 (S)	0.21	1.239
Benz[a]anthracene [3]	56-55-3	NDR	15.5	2.82 (S)	0.53	1.002
Chrysene [4]	218-01-9		217	2.97 (S)	0.33	1.002
Benzo[b]fluoranthene	205-99-2	NDR	12.5	1.83 (S)	0.32	1.004
Benzo[j,k]fluoranthenes		NDR	2.24	1.84 (S)	0.96	1.002
Benzo[e]pyrene	192-97-2		36.4	2.48 (S)	0.24	0.996
Benzo[a]pyrene	50-32-8	NDR	3.00	2.33 (S)	0.16	1.004
Perylene	198-55-0		45.6	2.50 (S)	0.24	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.73 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		2.01 (S)		
Benzo[ghi]perylene	191-24-2		7.71	2.07 (S)	0.23	1.002
2-Methylnaphthalene	91-57-6		181	0.872 (S)	0.92	1.009
1-Methylnaphthalene	90-12-0		204	0.962 (S)	0.92	1.040
C1-Naphthalenes			385	0.872 (S)		
Biphenyl	92-52-4		81.4	0.662 (S)	0.29	1.005
C1-Biphenyls			139	0.863 (S)		
C2-Biphenyls			319	0.842 (S)		
C2-Naphthalenes			3520	1.30 (S)		
1,2-Dimethylnaphthalene	573-98-8		197	1.30 (S)	1.22	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		671	0.989 (S)	0.64	1.011
C3-Naphthalenes			9180	2.43 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		2920	2.47 (S)	0.89	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		1800	2.39 (S)	0.99	1.225
C4-Naphthalenes			7660	3.02 (S)		
C1-Acenaphthenes			9.27	0.931 (S)		
C1-Fluorenes			1350	3.23 (S)		
1,7-Dimethylfluorene	442-66-0		460	5.78 (S)	0.08	1.033
C2-Fluorenes			4330	5.78 (S)		
C3-Fluorenes			4630	17.6 (S)		
Dibenzothiophene	132-65-0	NDR	381	1.93 (S)	0.10	1.003
C1-Dibenzothiophenes			2750	1.67 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		780	1.67 (S)	0.70	1.094
C2-Dibenzothiophenes			5410	1.98 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	519	1.98 (S)	0.75	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		882	1.59 (S)	0.14	1.153
C3-Dibenzothiophenes			2540	6.29 (S)		
C4-Dibenzothiophenes			1040	4.73 (S)		
3-Methylphenanthrene	832-71-3		1180	5.98 (S)	0.60	1.087
2-Methylphenanthrene	2531-84-2		1520	5.79 (S)	0.57	1.091
2-Methylanthracene	613-12-7	NDR	7.58	6.31 (S)	0.36	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		1970	5.98 (S)	0.58	1.105
1-Methylphenanthrene	832-69-9		1750	5.86 (S)	0.63	1.109
3,6-Dimethylphenanthrene	1576-67-6	NDR	513	7.32 (S)	0.89	1.164
2,6-Dimethylphenanthrene	17980-16-4		505	7.54 (S)	0.32	1.170
1,7-Dimethylphenanthrene	483-87-4		1920	7.79 (S)	0.32	1.192
1,8-Dimethylphenanthrene	7372-87-4		332	7.54 (S)	0.32	1.209
C3-Phenanthrenes/Anthracenes			4410	16.8 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		226	16.8 (S)	0.61	1.291
Retene	483-65-8		3400	22.1 (S)	1.44	1.300
C4-Phenanthrenes/Anthracenes			8620	22.1 (S)		
C1-Fluoranthenes/Pyrenes			698	2.41 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		282	2.41 (S)	1.16	1.300
C2-Fluoranthenes/Pyrenes			966	3.43 (S)		
C3-Fluoranthenes/Pyrenes			604	3.28 (S)		
C4-Fluoranthenes/Pyrenes			226	2.62 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			386	4.23 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		40.7	4.45 (S)		1.066
1-Methylchrysene	3351-28-8		52.5	4.03 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			416	2.74 (S)		
5,9-Dimethylchrysene	139493-40-6		90.2	2.74 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			188	3.15 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			20.7	2.82 (S)		
C1-Benzofluoranthenes/Benzopyrenes			63.4	4.16 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		8.54	4.16 (S)		1.109
C2-Benzofluoranthenes/Benzopyrenes			30.9	6.27 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		998	3.02 (S)	0.03	1.376
Anthracene d-10			2990	2.65 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		15100	124 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2630	7.10 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-11_Form1A_PH5H1350.D_SJ3582481.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-04 13-SEP-24
Sample Collection:
13-Sep-2024 10:46

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-11
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	19-Mar-2025 **Time:** 02:53:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1350.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1343.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	2260	56.2	0.09	0.610
2-Methylnaphthalene d-10		4040	2730	67.6	0.19	0.756
Biphenyl d-10		4010	2890	72.1		0.869
2,6-Dimethylnaphthalene d-12		4020	2990	74.3	0.66	0.896
Acenaphthylene d-8		4020	3010	75.0	0.16	0.961
Dibenzothiophene d-8		4010	2960	73.8	0.08	0.792
Phenanthrene d-10		4010	3060	76.3	0.14	0.809
Benzo[a]anthracene d-12		4000	3490	87.4	0.22	1.164
Chrysene d-12		3220	2780	86.4	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3490	87.4	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3360	85.9	0.18	0.961
Benzo[a]pyrene d-12		4010	3440	85.7	0.19	1.008
Perylene d-12		4000	3440	86.1	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3380	85.0	0.17	1.204
Benzo[ghi]perylene d-12		3980	3370	84.6	0.18	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

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Report Filename: PAH_PAH_LO_LPAHF_L42283-11_Form2_PH5H1350.D_SJ3582481.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-05 17-SEP-24
Sample Collection:
17-Sep-2024 11:02

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-12
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 03:42:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1351.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

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This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		76.6	1.64 (S)	0.06	1.006
Acenaphthylene	208-96-8		8.06	0.982 (S)	0.21	1.003
Acenaphthene	83-32-9		43.8	2.26 (S)	1.14	1.047
2-Methylfluorene	1430-97-3		105	3.25 (S)	1.17	0.939
C2 Phenanthrenes/Anthracenes			4310	1.81 (S)		
Fluorene	86-73-7		97.2	1.07 (S)	0.99	0.844
Phenanthrene	85-01-8		1070	2.94 (S)	0.19	1.004
Anthracene	120-12-7		28.7	2.90 (S)	0.19	1.011
C1 Phenanthrenes/Anthracenes			2270	4.87 (S)		
Fluoranthene	206-44-0		420	11.5 (S)	0.20	1.204
Pyrene	129-00-0	NDR	291	11.2 (S)	0.30	1.240
Benz[a]anthracene [3]	56-55-3	NDR	17.0	3.05 (S)	0.46	1.002
Chrysene [4]	218-01-9		179	3.35 (S)	0.32	1.002
Benzo[b]fluoranthene	205-99-2		12.8	2.07 (S)	0.23	1.004
Benzo[j,k]fluoranthenes		NDR	3.66	2.08 (S)	0.29	1.002
Benzo[e]pyrene	192-97-2		37.3	2.82 (S)	0.20	0.996
Benzo[a]pyrene	50-32-8	NDR	7.03	2.64 (S)	0.59	1.000
Perylene	198-55-0		56.1	2.95 (S)	0.23	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.98 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		1.51 (S)		
Benzo[ghi]perylene	191-24-2		8.78	1.53 (S)	0.16	1.003
2-Methylnaphthalene	91-57-6		50.6	0.983 (S)	0.93	1.009
1-Methylnaphthalene	90-12-0		60.3	1.08 (S)	0.92	1.040
C1-Naphthalenes			111	0.983 (S)		
Biphenyl	92-52-4		70.5	1.05 (S)	0.29	1.005
C1-Biphenyls			44.0	0.895 (S)		
C2-Biphenyls			95.9	0.987 (S)		
C2-Naphthalenes			473	3.53 (S)		
1,2-Dimethylnaphthalene	573-98-8		37.1	3.53 (S)	1.19	1.082

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		63.6	2.69 (S)	0.68	1.011
C3-Naphthalenes			1490	1.88 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		293	1.91 (S)	0.90	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		332	1.84 (S)	1.03	1.223
C4-Naphthalenes			1830	4.58 (S)		
C1-Acenaphthenes			3.22	1.26 (S)		
C1-Fluorenes			424	3.25 (S)		
1,7-Dimethylfluorene	442-66-0		110	6.06 (S)	0.08	1.034
C2-Fluorenes			1270	6.06 (S)		
C3-Fluorenes			1640	5.42 (S)		
Dibenzothiophene	132-65-0	NDR	35.5	2.29 (S)	0.13	1.003
C1-Dibenzothiophenes			238	3.30 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		61.3	3.30 (S)	0.84	1.094
C2-Dibenzothiophenes			1360	3.51 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	120	3.51 (S)	0.81	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		204	2.82 (S)	0.14	1.153
C3-Dibenzothiophenes			1990	6.20 (S)		
C4-Dibenzothiophenes			1170	4.46 (S)		
3-Methylphenanthrene	832-71-3		295	4.97 (S)	0.60	1.088
2-Methylphenanthrene	2531-84-2		534	4.81 (S)	0.57	1.092
2-Methylanthracene	613-12-7		20.8	5.25 (S)	0.58	1.098
9/4-Methylphenanthrene	883-20-5/832-64-4		535	4.97 (S)	0.61	1.106
1-Methylphenanthrene	832-69-9		888	4.87 (S)	0.62	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	203	1.76 (S)	1.03	1.165
2,6-Dimethylphenanthrene	17980-16-4		164	1.81 (S)	0.33	1.171
1,7-Dimethylphenanthrene	483-87-4		1600	1.87 (S)	0.31	1.193
1,8-Dimethylphenanthrene	7372-87-4		172	1.81 (S)	0.31	1.209
C3-Phenanthrenes/Anthracenes			3500	4.70 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		202	4.70 (S)	0.63	1.292
Retene	483-65-8		5470	18.9 (S)	1.45	1.301
C4-Phenanthrenes/Anthracenes			10700	18.9 (S)		
C1-Fluoranthenes/Pyrenes			593	8.01 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	NDR	269	8.01 (S)	1.26	1.301
C2-Fluoranthenes/Pyrenes			850	4.36 (S)		
C3-Fluoranthenes/Pyrenes			594	7.49 (S)		
C4-Fluoranthenes/Pyrenes			273	6.72 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			354	3.64 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		36.1	3.82 (S)		1.066
1-Methylchrysene	3351-28-8		49.3	3.47 (S)		1.074
C2-Benzo[a]anthracenes/Chrysenes [4]			440	6.13 (S)		
5,9-Dimethylchrysene	139493-40-6		90.5	6.13 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]			127	3.54 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]			63.1	4.57 (S)		
C1-Benzofluoranthenes/Benzopyrenes			93.0	3.22 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		12.7	3.22 (S)		1.108
C2-Benzofluoranthenes/Benzopyrenes			285	5.58 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		189	4.58 (S)	0.03	1.376
Anthracene d-10			1900	4.49 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		12900	12.0 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2680	4.71 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-12_Form1A_PH5H1351.D_SJ3582482.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-05 17-SEP-24
Sample Collection:
17-Sep-2024 11:02

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-12
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	19-Mar-2025 **Time:** 03:42:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1351.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1343.D

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1360	33.9	0.09	0.610
2-Methylnaphthalene d-10		4040	1770	43.8	0.19	0.756
Biphenyl d-10		4010	2030	50.6		0.869
2,6-Dimethylnaphthalene d-12		4020	2120	52.8	0.66	0.896
Acenaphthylene d-8		4020	2180	54.2	0.16	0.961
Dibenzothiophene d-8		4010	2600	65.0	0.08	0.792
Phenanthrene d-10		4010	2730	68.1	0.14	0.808
Benzo[a]anthracene d-12		4000	3210	80.2	0.22	1.164
Chrysene d-12		3220	2550	79.4	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3120	78.1	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3030	77.4	0.18	0.961
Benzo[a]pyrene d-12		4010	3090	77.1	0.19	1.009
Perylene d-12		4000	3090	77.3	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3110	78.3	0.17	1.204
Benzo[ghi]perylene d-12		3980	3080	77.5	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-12_Form2_PH5H1351.D_SJ3582482.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-07 18-SEP-24
Sample Collection:
18-Sep-2024 13:58

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-14
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 04:31:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1352.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		56.9	2.58 (S)	0.07	1.006
Acenaphthylene	208-96-8		4.71	0.951 (S)	0.21	1.003
Acenaphthene	83-32-9		41.9	1.63 (S)	1.14	1.047
2-Methylfluorene	1430-97-3		53.3	2.71 (S)	1.18	0.939
C2 Phenanthrenes/Anthracenes			1430	2.06 (S)		
Fluorene	86-73-7		53.5	0.838 (S)	0.96	0.844
Phenanthrene	85-01-8		604	1.90 (S)	0.18	1.003
Anthracene	120-12-7		10.3	1.88 (S)	0.21	1.011
C1 Phenanthrenes/Anthracenes			1120	1.74 (S)		
Fluoranthene	206-44-0		238	1.70 (S)	0.20	1.203
Pyrene	129-00-0	NDR	170	1.65 (S)	0.35	1.239
Benz[a]anthracene [3]	56-55-3		6.39	0.805 (S)	0.29	1.002
Chrysene [4]	218-01-9		76.8	0.892 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		6.59	0.971 (S)	0.22	1.004
Benzo[j,k]fluoranthenes		NDR	3.14	0.962 (S)	0.15	1.001
Benzo[e]pyrene	192-97-2	NDR	16.0	1.29 (S)	0.28	0.995
Benzo[a]pyrene	50-32-8	NDR	1.44	1.21 (S)	0.46	1.003
Perylene	198-55-0		40.7	1.31 (S)	0.24	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.795 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	1.75	0.902 (S)	3.20	1.002
Benzo[ghi]perylene	191-24-2		4.86	0.921 (S)	0.23	1.002
2-Methylnaphthalene	91-57-6		27.5	1.05 (S)	0.91	1.009
1-Methylnaphthalene	90-12-0		34.3	1.16 (S)	1.00	1.040
C1-Naphthalenes			61.8	1.05 (S)		
Biphenyl	92-52-4		23.7	1.18 (S)	0.27	1.005
C1-Biphenyls			19.1	0.844 (S)		
C2-Biphenyls			44.4	0.754 (S)		
C2-Naphthalenes			243	2.51 (S)		
1,2-Dimethylnaphthalene	573-98-8		16.1	2.51 (S)	1.39	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		30.6	1.91 (S)	0.67	1.011
C3-Naphthalenes			792	2.56 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		170	2.61 (S)	0.87	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		172	2.52 (S)	1.00	1.228
C4-Naphthalenes			945	3.73 (S)		
C1-Acenaphthenes			2.26	1.19 (S)		
C1-Fluorenes			217	2.71 (S)		
1,7-Dimethylfluorene	442-66-0		48.0	3.68 (S)	0.07	1.034
C2-Fluorenes			592	3.68 (S)		
C3-Fluorenes			535	2.81 (S)		
Dibenzothiophene	132-65-0	NDR	24.4	1.06 (S)	0.13	1.003
C1-Dibenzothiophenes			135	1.31 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		33.2	1.31 (S)	0.77	1.094
C2-Dibenzothiophenes			354	1.94 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	31.0	1.94 (S)	0.79	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		49.6	1.55 (S)	0.15	1.153
C3-Dibenzothiophenes			225	1.55 (S)		
C4-Dibenzothiophenes			63.7	1.76 (S)		
3-Methylphenanthrene	832-71-3		150	1.77 (S)	0.59	1.087
2-Methylphenanthrene	2531-84-2		235	1.72 (S)	0.58	1.091
2-Methylanthracene	613-12-7	NDR	10.0	1.87 (S)	0.74	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		300	1.77 (S)	0.60	1.106
1-Methylphenanthrene	832-69-9		434	1.74 (S)	0.60	1.109
3,6-Dimethylphenanthrene	1576-67-6	NDR	71.9	2.00 (S)	1.06	1.164
2,6-Dimethylphenanthrene	17980-16-4		47.7	2.06 (S)	0.32	1.171
1,7-Dimethylphenanthrene	483-87-4		551	2.12 (S)	0.30	1.192
1,8-Dimethylphenanthrene	7372-87-4		67.1	2.06 (S)	0.30	1.209
C3-Phenanthrenes/Anthracenes			747	3.29 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		40.8	3.29 (S)	0.50	1.291
Retene	483-65-8		2400	10.1 (S)	1.51	1.300
C4-Phenanthrenes/Anthracenes			3040	10.1 (S)		
C1-Fluoranthenes/Pyrenes			238	1.07 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	NDR	111	1.07 (S)	1.31	1.300
C2-Fluoranthenes/Pyrenes			134	1.17 (S)		
C3-Fluoranthenes/Pyrenes			45.2	0.640 (S)		
C4-Fluoranthenes/Pyrenes			11.2	0.983 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			44.2	0.637 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		4.30	0.670 (S)		1.066
1-Methylchrysene	3351-28-8		6.69	0.607 (S)		1.074
C2-Benzo[a]anthracenes/Chrysenes [4]			21.2	1.32 (S)		
5,9-Dimethylchrysene	139493-40-6		4.13	1.32 (S)		1.127
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.55 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		1.60 (S)		
C1-Benzofluoranthenes/Benzopyrenes			8.37	1.87 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		1.87 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		1.62 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		103	3.73 (S)	0.03	1.376
Anthracene d-10			2450	0.518 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		14600	2.63 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2680	2.50 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-14_Form1A_PH5H1352.D_SJ3582483.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-07 18-SEP-24
Sample Collection:
18-Sep-2024 13:58

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-14
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	19-Mar-2025 **Time:** 04:31:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1352.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1343.D

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LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1160	28.9	0.09	0.610
2-Methylnaphthalene d-10		4040	1570	38.9	0.19	0.756
Biphenyl d-10		4010	1820	45.3		0.869
2,6-Dimethylnaphthalene d-12		4020	1890	47.1	0.66	0.896
Acenaphthylene d-8		4020	1970	48.9	0.16	0.961
Dibenzothiophene d-8		4010	2480	61.8	0.08	0.792
Phenanthrene d-10		4010	2600	64.9	0.14	0.809
Benzo[a]anthracene d-12		4000	3130	78.2	0.22	1.164
Chrysene d-12		3220	2500	77.7	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3100	77.7	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3020	77.2	0.18	0.961
Benzo[a]pyrene d-12		4010	3090	77.0	0.19	1.009
Perylene d-12		4000	3080	76.9	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3010	75.8	0.17	1.204
Benzo[ghi]perylene d-12		3980	2980	74.9	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-14_Form2_PH5H1352.D_SJ3582483.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-08 17-SEP-24
Sample Collection:
17-Sep-2024 10:13

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-15
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	19-Mar-2025 **Time:** 05:21:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1353.D**
Dilution Factor:	N/A	**Blank Data Filename:**	PH5H1333.D
		Cal. Ver. Data Filename:	PH5H1343.D

Concentration Units: ng/sample

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This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		75.8	1.57 (S)	0.07	1.006
Acenaphthylene	208-96-8		8.09	0.717 (S)	0.22	1.003
Acenaphthene	83-32-9		29.1	1.40 (S)	1.20	1.047
2-Methylfluorene	1430-97-3		103	1.63 (S)	1.14	0.939
C2 Phenanthrenes/Anthracenes			4880	5.26 (S)		
Fluorene	86-73-7		87.9	1.10 (S)	0.96	0.844
Phenanthrene	85-01-8		1010	3.38 (S)	0.19	1.004
Anthracene	120-12-7		27.6	3.34 (S)	0.21	1.011
C1 Phenanthrenes/Anthracenes			2450	4.68 (S)		
Fluoranthene	206-44-0		491	8.30 (S)	0.19	1.204
Pyrene	129-00-0	NDR	319	8.08 (S)	0.27	1.240
Benz[a]anthracene [3]	56-55-3	NDR	14.0	1.90 (S)	0.42	1.002
Chrysene [4]	218-01-9		175	2.02 (S)	0.29	1.002
Benzo[b]fluoranthene	205-99-2		9.51	1.81 (S)	0.24	1.004
Benzo[j,k]fluoranthenes		NDR	2.90	1.82 (S)	0.30	1.001
Benzo[e]pyrene	192-97-2		22.4	2.49 (S)	0.22	0.996
Benzo[a]pyrene	50-32-8	ND		2.34 (S)		
Perylene	198-55-0		50.3	2.56 (S)	0.24	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.856 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	2.02	0.814 (S)	2.55	1.003
Benzo[ghi]perylene	191-24-2		5.33	0.839 (S)	0.25	1.002
2-Methylnaphthalene	91-57-6		47.6	1.10 (S)	0.90	1.008
1-Methylnaphthalene	90-12-0		56.9	1.22 (S)	0.94	1.039
C1-Naphthalenes			105	1.10 (S)		
Biphenyl	92-52-4		73.8	1.35 (S)	0.27	1.005
C1-Biphenyls			40.0	1.09 (S)		
C2-Biphenyls			88.4	1.35 (S)		
C2-Naphthalenes			434	2.41 (S)		
1,2-Dimethylnaphthalene	573-98-8		34.9	2.41 (S)	1.28	1.082

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		60.5	1.83 (S)	0.65	1.011
C3-Naphthalenes			1410	2.19 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		277	2.23 (S)	0.89	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		317	2.15 (S)	1.01	1.223
C4-Naphthalenes			1890	6.90 (S)		
C1-Acenaphthenes			3.13	2.02 (S)		
C1-Fluorenes			399	1.63 (S)		
1,7-Dimethylfluorene	442-66-0		123	4.83 (S)	0.07	1.034
C2-Fluorenes			1470	4.83 (S)		
C3-Fluorenes			1810	2.87 (S)		
Dibenzothiophene	132-65-0	NDR	33.7	2.55 (S)	0.16	1.003
C1-Dibenzothiophenes			260	2.49 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		74.2	2.49 (S)	0.66	1.094
C2-Dibenzothiophenes			1390	0.975 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	123	0.975 (S)	0.67	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		199	0.782 (S)	0.14	1.153
C3-Dibenzothiophenes			1300	4.72 (S)		
C4-Dibenzothiophenes			480	5.06 (S)		
3-Methylphenanthrene	832-71-3		312	4.78 (S)	0.58	1.088
2-Methylphenanthrene	2531-84-2		575	4.62 (S)	0.57	1.092
2-Methylanthracene	613-12-7		24.4	5.04 (S)	0.55	1.098
9/4-Methylphenanthrene	883-20-5/832-64-4		580	4.78 (S)	0.60	1.106
1-Methylphenanthrene	832-69-9		960	4.68 (S)	0.62	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	221	5.10 (S)	1.03	1.165
2,6-Dimethylphenanthrene	17980-16-4		202	5.26 (S)	0.33	1.171
1,7-Dimethylphenanthrene	483-87-4		1900	5.43 (S)	0.31	1.193
1,8-Dimethylphenanthrene	7372-87-4		199	5.26 (S)	0.35	1.209
C3-Phenanthrenes/Anthracenes			3120	4.52 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		184	4.52 (S)	0.54	1.292
Retene	483-65-8	OLR				
C4-Phenanthrenes/Anthracenes		X				
C1-Fluoranthenes/Pyrenes			658	4.09 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	NDR	310	4.09 (S)	1.32	1.301
C2-Fluoranthenes/Pyrenes			568	1.53 (S)		
C3-Fluoranthenes/Pyrenes			206	1.32 (S)		
C4-Fluoranthenes/Pyrenes			50.2	2.49 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			152	1.76 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		17.1	1.85 (S)		1.066
1-Methylchrysene	3351-28-8		21.0	1.68 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			83.8	2.46 (S)		
5,9-Dimethylchrysene	139493-40-6		18.4	2.46 (S)		1.129
C3-Benzo[a]anthracenes/Chrysenes [4]			18.2	1.21 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		1.59 (S)		
C1-Benzofluoranthenes/Benzopyrenes			19.9	1.91 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		1.91 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		4.16 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	NDR	198	6.90 (S)	0.03	1.376
Anthracene d-10			1200	1.06 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		10800	6.74 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2700	2.84 (S)	0.23	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; X = result reported separately; OLR = exceeds calibrated linear range, see dilution data.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-15_Form1A_PH5H1353.D_SJ3582484.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-08 17-SEP-24
Sample Collection:
17-Sep-2024 10:13

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-15 N
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	25-Mar-2025 **Time:** 23:54:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1503.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	5	**Cal. Ver. Data Filename:**	PH5H1499.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3	X				
Acenaphthylene	208-96-8	X				
Acenaphthene	83-32-9	X				
2-Methylfluorene	1430-97-3	X				
C2 Phenanthrenes/Anthracenes		X				
Fluorene	86-73-7	X				
Phenanthrene	85-01-8	X				
Anthracene	120-12-7	X				
C1 Phenanthrenes/Anthracenes		X				
Fluoranthene	206-44-0	X				
Pyrene	129-00-0	X				
Benz[a]anthracene [3]	56-55-3	X				
Chrysene [4]	218-01-9	X				
Benzo[b]fluoranthene	205-99-2	X				
Benzo[j,k]fluoranthenes		X				
Benzo[e]pyrene	192-97-2	X				
Benzo[a]pyrene	50-32-8	X				
Perylene	198-55-0	X				
Dibenz[a,h]anthracene [5]	53-70-3	X				
Indeno[1,2,3-cd]pyrene	193-39-5	X				
Benzo[ghi]perylene	191-24-2	X				
2-Methylnaphthalene	91-57-6	X				
1-Methylnaphthalene	90-12-0	X				
C1-Naphthalenes		X				
Biphenyl	92-52-4	X				
C1-Biphenyls		X				
C2-Biphenyls		X				
C2-Naphthalenes		X				
1,2-Dimethylnaphthalene	573-98-8	X				

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0	X				
C3-Naphthalenes		X				
2,3,6-Trimethylnaphthalene	829-26-5	X				
2,3,5-Trimethylnaphthalene	2245-38-7	X				
C4-Naphthalenes		X				
C1-Acenaphthenes		X				
C1-Fluorenes		X				
1,7-Dimethylfluorene	442-66-0	X				
C2-Fluorenes		X				
C3-Fluorenes		X				
Dibenzothiophene	132-65-0	X				
C1-Dibenzothiophenes		X				
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	X				
C2-Dibenzothiophenes		X				
2,4-Dimethyldibenzothiophene	31317-18-7	X				
4,6-Dimethyldibenzothiophene	1207-12-1	X				
C3-Dibenzothiophenes		X				
C4-Dibenzothiophenes		X				
3-Methylphenanthrene	832-71-3	X				
2-Methylphenanthrene	2531-84-2	X				
2-Methylanthracene	613-12-7	X				
9/4-Methylphenanthrene	883-20-5/832-64-4	X				
1-Methylphenanthrene	832-69-9	X				
3,6-Dimethylphenanthrene	1576-67-6	X				
2,6-Dimethylphenanthrene	17980-16-4	X				
1,7-Dimethylphenanthrene	483-87-4	X				
1,8-Dimethylphenanthrene	7372-87-4	X				
C3-Phenanthrenes/Anthracenes		X				
1,2,6-Trimethylphenanthrene	30436-55-6	X				
Retene	483-65-8	D	6980	66.1 (S)	1.50	1.301
C4-Phenanthrenes/Anthracenes		D	10100	66.1 (S)		
C1-Fluoranthenes/Pyrenes		X				
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	X				
C2-Fluoranthenes/Pyrenes		X				
C3-Fluoranthenes/Pyrenes		X				
C4-Fluoranthenes/Pyrenes		X				
C1-Benzo[a]anthracenes/Chrysenes [4]		X				
5/6-Methylchrysene	3697-24-3/1705-85-7	X				
1-Methylchrysene	3351-28-8	X				
C2-Benzo[a]anthracenes/Chrysenes [4]		X				
5,9-Dimethylchrysene	139493-40-6	X				
C3-Benzo[a]anthracenes/Chrysenes [4]		X				
C4-Benzo[a]anthracenes/Chrysenes [4]		X				
C1-Benzofluoranthenes/Benzopyrenes		X				
7-Methylbenzo[a]pyrene	63041-77-0	X				
C2-Benzofluoranthenes/Benzopyrenes		X				
1,4,6,7-Tetramethylnaphthalene	13764-18-6	X				
Anthracene d-10		X				
Fluoranthene d-10	93951-69-0	X				
Dibenzo[a,h]anthracene d-14	13250-98-1	X				

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-15_Form1A_PH5H1503.D_SJ3584916.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-08 17-SEP-24
Sample Collection:
17-Sep-2024 10:13

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-15
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 05:21:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1353.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D
Concentration Units:	ng absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1570	39.1	0.09	0.610
2-Methylnaphthalene d-10		4040	1860	46.0	0.19	0.757
Biphenyl d-10		4010	2000	49.9		0.869
2,6-Dimethylnaphthalene d-12		4020	2090	52.0	0.65	0.896
Acenaphthylene d-8		4020	2140	53.2	0.16	0.961
Dibenzothiophene d-8		4010	2580	64.4	0.08	0.792
Phenanthrene d-10		4010	2730	68.1	0.14	0.808
Benzo[a]anthracene d-12		4000	3310	82.7	0.22	1.164
Chrysene d-12		3220	2650	82.4	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3230	81.1	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3160	80.7	0.18	0.961
Benzo[a]pyrene d-12		4010	3180	79.2	0.19	1.008
Perylene d-12		4000	3190	79.6	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3110	78.4	0.17	1.204
Benzo[ghi]perylene d-12		3980	3100	77.9	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-15_Form2_PH5H1353.D_SJ3582484.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-08 17-SEP-24
Sample Collection:
17-Sep-2024 10:13

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.:	4608	**Project No.**	NORMAN WELLS AEMP
Matrix:	SPMD	**Lab Sample I.D.:**	L42283-15 N
Sample Receipt Date:	18-Oct-2024	**Sample Size:**	1 sample
Extraction Date:	24-Feb-2025	**Initial Calibration Date:**	05-Feb-2025
Analysis Date:	25-Mar-2025 **Time:** 23:54:00	**Instrument ID:**	LR GC/MS
Extract Volume (uL):	500	**GC Column ID:**	RTX5
Injection Volume (uL):	1.0	**Sample Data Filename:**	**PH5H1503.D**
Dilution Factor:	5	**Blank Data Filename:**	PH5H1333.D
Concentration Units:	ng absolute	**Cal. Ver. Data Filename:**	PH5H1499.D

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LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8	X					
2-Methylnaphthalene d-10	X					
Biphenyl d-10	X					
2,6-Dimethylnaphthalene d-12	X					
Acenaphthylene d-8	X					
Dibenzothiophene d-8	X					
Phenanthrene d-10	D	4010	2580	64.4	0.14	0.808
Benzo[a]anthracene d-12	X					
Chrysene d-12	X					
Benzo[b]fluoranthene d-12	X					
Benzo[k]fluoranthene d-12	X					
Benzo[a]pyrene d-12	X					
Perylene d-12	X					
Indeno[1,2,3-cd]pyrene d-12	X					
Benzo[ghi]perylene d-12	X					

(1) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-15_Form2_PH5H1503.D_SJ3584916.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
AEMP-DS-09 17-SEP-24
Sample Collection:
17-Sep-2024 11:37

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-16
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 06:10:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1354.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		55.5	2.21 (S)	0.07	1.006
Acenaphthylene	208-96-8		5.32	1.28 (S)	0.17	1.003
Acenaphthene	83-32-9		22.4	1.24 (S)	1.13	1.047
2-Methylfluorene	1430-97-3		63.9	1.65 (S)	1.08	0.939
C2 Phenanthrenes/Anthracenes			1320	2.94 (S)		
Fluorene	86-73-7		54.3	1.33 (S)	1.03	0.844
Phenanthrene	85-01-8		619	1.65 (S)	0.19	1.003
Anthracene	120-12-7		16.8	1.63 (S)	0.20	1.011
C1 Phenanthrenes/Anthracenes			1080	0.746 (S)		
Fluoranthene	206-44-0		265	1.55 (S)	0.20	1.203
Pyrene	129-00-0	NDR	199	1.51 (S)	0.36	1.239
Benz[a]anthracene [3]	56-55-3		6.93	0.856 (S)	0.31	1.002
Chrysene [4]	218-01-9		67.4	0.850 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		5.41	0.683 (S)	0.20	1.004
Benzo[j,k]fluoranthenes		NDR	2.38	0.696 (S)	0.13	1.001
Benzo[e]pyrene	192-97-2		13.4	0.924 (S)	0.25	0.996
Benzo[a]pyrene	50-32-8	ND		0.866 (S)		
Perylene	198-55-0		35.1	1.00 (S)	0.20	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		1.17 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	1.65	0.643 (S)	3.53	1.002
Benzo[ghi]perylene	191-24-2		4.57	0.658 (S)	0.22	1.002
2-Methylnaphthalene	91-57-6		28.4	1.20 (S)	0.93	1.008
1-Methylnaphthalene	90-12-0		37.4	1.32 (S)	0.92	1.039
C1-Naphthalenes			65.8	1.20 (S)		
Biphenyl	92-52-4		37.7	0.982 (S)	0.28	1.005
C1-Biphenyls			22.5	0.926 (S)		
C2-Biphenyls			48.2	0.533 (S)		
C2-Naphthalenes			224	3.25 (S)		
1,2-Dimethylnaphthalene	573-98-8		18.2	3.25 (S)	1.25	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		24.8	2.47 (S)	0.67	1.010
C3-Naphthalenes			729	2.77 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		125	2.82 (S)	0.88	1.202
2,3,5-Trimethylnaphthalene	2245-38-7		162	2.72 (S)	1.02	1.222
C4-Naphthalenes			881	1.72 (S)		
C1-Acenaphthenes			1.51	1.28 (S)		
C1-Fluorenes			232	1.65 (S)		
1,7-Dimethylfluorene	442-66-0		50.3	2.77 (S)	0.06	1.033
C2-Fluorenes			611	2.77 (S)		
C3-Fluorenes			449	4.46 (S)		
Dibenzothiophene	132-65-0	NDR	11.8	0.698 (S)	0.21	1.003
C1-Dibenzothiophenes			45.0	1.28 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		9.70	1.28 (S)	0.80	1.095
C2-Dibenzothiophenes			188	2.68 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	14.0	2.68 (S)	0.79	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		22.9	2.15 (S)	0.16	1.153
C3-Dibenzothiophenes			136	2.74 (S)		
C4-Dibenzothiophenes			42.1	2.71 (S)		
3-Methylphenanthrene	832-71-3		127	0.762 (S)	0.60	1.087
2-Methylphenanthrene	2531-84-2		235	0.738 (S)	0.58	1.091
2-Methylanthracene	613-12-7	NDR	11.6	0.805 (S)	0.76	1.097
9/4-Methylphenanthrene	883-20-5/832-64-4		248	0.762 (S)	0.62	1.106
1-Methylphenanthrene	832-69-9		466	0.746 (S)	0.58	1.109
3,6-Dimethylphenanthrene	1576-67-6	NDR	62.6	2.86 (S)	1.10	1.164
2,6-Dimethylphenanthrene	17980-16-4		38.8	2.94 (S)	0.34	1.170
1,7-Dimethylphenanthrene	483-87-4		665	3.04 (S)	0.30	1.192
1,8-Dimethylphenanthrene	7372-87-4		58.7	2.94 (S)	0.34	1.209
C3-Phenanthrenes/Anthracenes			617	2.18 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6		36.7	2.18 (S)	0.54	1.291
Retene	483-65-8		3060	14.3 (S)	1.50	1.300
C4-Phenanthrenes/Anthracenes			3590	14.3 (S)		
C1-Fluoranthenes/Pyrenes			252	1.92 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	NDR	125	1.92 (S)	1.32	1.300
C2-Fluoranthenes/Pyrenes			112	1.52 (S)		
C3-Fluoranthenes/Pyrenes			30.7	0.805 (S)		
C4-Fluoranthenes/Pyrenes			8.67	0.734 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			33.1	0.456 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		2.70	0.480 (S)		1.066
1-Methylchrysene	3351-28-8		5.91	0.435 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			17.1	1.10 (S)		
5,9-Dimethylchrysene	139493-40-6		2.58	1.10 (S)		1.128
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		1.93 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		1.53 (S)		
C1-Benzofluoranthenes/Benzopyrenes			11.6	1.70 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		1.70 (S)		
C2-Benzofluoranthenes/Benzopyrenes			2.52	1.74 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		83.8	1.72 (S)	0.02	1.375
Anthracene d-10			2010	0.643 (S)	0.14	1.008
Fluoranthene d-10	93951-69-0		13700	1.85 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		2670	3.27 (S)	0.24	1.003

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-16_Form1A_PH5H1354.D_SJ3582485.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
AEMP-DS-09 17-SEP-24
Sample Collection:
17-Sep-2024 11:37

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-16
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 06:10:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1354.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D
Concentration Units:	ng absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1490	37.2	0.09	0.611
2-Methylnaphthalene d-10		4040	1950	48.2	0.19	0.757
Biphenyl d-10		4010	2190	54.5		0.869
2,6-Dimethylnaphthalene d-12		4020	2280	56.6	0.66	0.896
Acenaphthylene d-8		4020	2350	58.6	0.16	0.961
Dibenzothiophene d-8		4010	2700	67.2	0.08	0.792
Phenanthrene d-10		4010	2820	70.2	0.14	0.809
Benzo[a]anthracene d-12		4000	3380	84.4	0.22	1.164
Chrysene d-12		3220	2710	84.4	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3390	84.9	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3260	83.4	0.18	0.961
Benzo[a]pyrene d-12		4010	3350	83.4	0.19	1.008
Perylene d-12		4000	3300	82.6	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3250	81.9	0.17	1.204
Benzo[ghi]perylene d-12		3980	3230	81.1	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-16_Form2_PH5H1354.D_SJ3582485.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Dup 1 13-SEP-24
Sample Collection:
13-Sep-2024 12:10

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-17
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 07:00:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1355.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		25.8	2.17 (S)	0.07	1.006
Acenaphthylene	208-96-8		1.48	1.30 (S)	0.24	1.003
Acenaphthene	83-32-9		39.2	1.94 (S)	1.18	1.047
2-Methylfluorene	1430-97-3		65.1	2.85 (S)	1.13	0.939
C2 Phenanthrenes/Anthracenes			1290	6.49 (S)		
Fluorene	86-73-7		45.2	1.28 (S)	0.96	0.844
Phenanthrene	85-01-8		342	3.53 (S)	0.19	1.004
Anthracene	120-12-7	NDR	21.3	3.49 (S)	0.28	1.011
C1 Phenanthrenes/Anthracenes			494	2.80 (S)		
Fluoranthene	206-44-0		948	1.10 (S)	0.20	1.204
Pyrene	129-00-0		840	1.07 (S)	0.22	1.240
Benz[a]anthracene [3]	56-55-3		76.9	1.55 (S)	0.26	1.002
Chrysene [4]	218-01-9		170	1.50 (S)	0.30	1.002
Benzo[b]fluoranthene	205-99-2		24.5	1.24 (S)	0.20	1.004
Benzo[j,k]fluoranthenes			18.4	1.26 (S)	0.17	1.002
Benzo[e]pyrene	192-97-2		26.1	1.65 (S)	0.23	0.996
Benzo[a]pyrene	50-32-8		9.44	1.55 (S)	0.21	1.003
Perylene	198-55-0	NDR	6.07	1.73 (S)	0.05	1.004
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.771 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	NDR	1.80	0.972 (S)	1.68	1.002
Benzo[ghi]perylene	191-24-2		2.94	1.03 (S)	0.23	1.002
2-Methylnaphthalene	91-57-6		25.3	1.27 (S)	1.05	1.008
1-Methylnaphthalene	90-12-0		26.5	1.40 (S)	0.91	1.039
C1-Naphthalenes			51.8	1.27 (S)		
Biphenyl	92-52-4		16.7	1.39 (S)	0.30	1.005
C1-Biphenyls			19.5	0.725 (S)		
C2-Biphenyls			66.8	1.39 (S)		
C2-Naphthalenes			416	2.86 (S)		
1,2-Dimethylnaphthalene	573-98-8		51.4	2.86 (S)	1.37	1.082

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COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0		61.2	2.17 (S)	0.66	1.011
C3-Naphthalenes			1550	3.55 (S)		
2,3,6-Trimethylnaphthalene	829-26-5		224	3.61 (S)	0.86	1.203
2,3,5-Trimethylnaphthalene	2245-38-7		212	3.49 (S)	1.02	1.228
C4-Naphthalenes			3530	5.01 (S)		
C1-Acenaphthenes			14.6	1.38 (S)		
C1-Fluorenes			335	2.85 (S)		
1,7-Dimethylfluorene	442-66-0		119	1.57 (S)	0.07	1.034
C2-Fluorenes			1310	1.57 (S)		
C3-Fluorenes			1340	7.93 (S)		
Dibenzothiophene	132-65-0	NDR	27.7	3.62 (S)	0.30	1.003
C1-Dibenzothiophenes			322	2.61 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		105	2.61 (S)	0.71	1.094
C2-Dibenzothiophenes			1440	3.88 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	NDR	140	3.88 (S)	0.77	1.162
4,6-Dimethyldibenzothiophene	1207-12-1		224	3.12 (S)	0.14	1.153
C3-Dibenzothiophenes			894	3.94 (S)		
C4-Dibenzothiophenes			311	1.27 (S)		
3-Methylphenanthrene	832-71-3		106	2.86 (S)	0.60	1.088
2-Methylphenanthrene	2531-84-2		123	2.77 (S)	0.60	1.092
2-Methylanthracene	613-12-7	NDR	5.93	3.02 (S)	1.04	1.098
9/4-Methylphenanthrene	883-20-5/832-64-4		139	2.86 (S)	0.67	1.106
1-Methylphenanthrene	832-69-9		126	2.80 (S)	0.69	1.110
3,6-Dimethylphenanthrene	1576-67-6	NDR	107	6.30 (S)	0.76	1.165
2,6-Dimethylphenanthrene	17980-16-4		72.0	6.49 (S)	0.32	1.171
1,7-Dimethylphenanthrene	483-87-4		154	6.70 (S)	0.36	1.193
1,8-Dimethylphenanthrene	7372-87-4		73.9	6.49 (S)	0.33	1.209
C3-Phenanthrenes/Anthracenes			1150	3.22 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6	NDR	53.6	3.22 (S)	0.66	1.292
Retene	483-65-8		322	5.61 (S)	1.30	1.301
C4-Phenanthrenes/Anthracenes			1910	5.61 (S)		
C1-Fluoranthenes/Pyrenes			434	2.82 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		143	2.82 (S)	0.98	1.301
C2-Fluoranthenes/Pyrenes			410	2.68 (S)		
C3-Fluoranthenes/Pyrenes			168	3.18 (S)		
C4-Fluoranthenes/Pyrenes			73.1	1.67 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			150	0.752 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7		12.4	0.790 (S)		1.066
1-Methylchrysene	3351-28-8		14.7	0.716 (S)		1.073
C2-Benzo[a]anthracenes/Chrysenes [4]			99.1	1.05 (S)		
5,9-Dimethylchrysene	139493-40-6		19.8	1.05 (S)		1.127
C3-Benzo[a]anthracenes/Chrysenes [4]			22.1	0.990 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		1.54 (S)		
C1-Benzofluoranthenes/Benzopyrenes			16.7	1.84 (S)		
7-Methylbenzo[a]pyrene	63041-77-0		2.00	1.84 (S)		1.109
C2-Benzofluoranthenes/Benzopyrenes			6.65	2.04 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6		667	5.01 (S)	0.03	1.376
Anthracene d-10			4030	2.78 (S)	0.15	1.008
Fluoranthene d-10	93951-69-0		13300	8.41 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1		1780	1.17 (S)	0.25	1.004

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest1A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-17_Form1A_PH5H1355.D_SJ3582486.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Dup 1 13-SEP-24
Sample Collection:
13-Sep-2024 12:10

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	NORMAN WELLS AEMP		
Contract No.:	4608	**Lab Sample I.D.:**	L42283-17
Matrix:	SPMD	**Sample Size:**	1 sample
Sample Receipt Date:	18-Oct-2024	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	19-Mar-2025 **Time:** 07:00:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1355.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1343.D
Concentration Units:	ng absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1320	32.9	0.09	0.610
2-Methylnaphthalene d-10		4040	1620	40.2	0.19	0.757
Biphenyl d-10		4010	1820	45.3		0.869
2,6-Dimethylnaphthalene d-12		4020	1890	47.0	0.66	0.896
Acenaphthylene d-8		4020	1990	49.5	0.16	0.961
Dibenzothiophene d-8		4010	2630	65.5	0.08	0.792
Phenanthrene d-10		4010	2770	69.2	0.14	0.808
Benzo[a]anthracene d-12		4000	3560	89.0	0.22	1.164
Chrysene d-12		3220	2850	88.6	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3470	87.1	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3360	85.9	0.18	0.961
Benzo[a]pyrene d-12		4010	3470	86.4	0.19	1.008
Perylene d-12		4000	3430	85.8	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3340	84.1	0.17	1.204
Benzo[ghi]perylene d-12		3980	3330	83.6	0.19	1.235

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

For Axys Internal Use Only [XSL Template: Pest2.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: PAH_PAH_LO_LPAHF_L42283-17_Form2_PH5H1355.D_SJ3582486.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 1A

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4608	**Lab Sample I.D.:**	WG92967-101
Matrix:	SOLVENT	**Sample Size:**	1 sample
Sample Receipt Date:	N/A	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	18-Mar-2025 **Time:** 14:21:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1333.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1329.D

Concentration Units: ng/sample

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
Naphthalene	91-20-3		2.50	0.820 (S)	0.08	1.006
Acenaphthylene	208-96-8	ND		0.483 (S)		
Acenaphthene	83-32-9	ND		0.906 (S)		
2-Methylfluorene	1430-97-3	ND		0.808 (S)		
C2 Phenanthrenes/Anthracenes		ND		0.808 (S)		
Fluorene	86-73-7	ND		0.648 (S)		
Phenanthrene	85-01-8	NDR	0.579	0.533 (S)	0.27	1.004
Anthracene	120-12-7	ND		0.527 (S)		
C1 Phenanthrenes/Anthracenes		ND		0.956 (S)		
Fluoranthene	206-44-0	ND		0.468 (S)		
Pyrene	129-00-0	ND		0.456 (S)		
Benz[a]anthracene [3]	56-55-3	ND		0.324 (S)		
Chrysene [4]	218-01-9	ND		0.343 (S)		
Benzo[b]fluoranthene	205-99-2	ND		0.717 (S)		
Benzo[j,k]fluoranthenes		ND		0.714 (S)		
Benzo[e]pyrene	192-97-2	ND		0.936 (S)		
Benzo[a]pyrene	50-32-8	ND		0.878 (S)		
Perylene	198-55-0	ND		1.04 (S)		
Dibenz[a,h]anthracene [5]	53-70-3	ND		0.500 (S)		
Indeno[1,2,3-cd]pyrene	193-39-5	ND		0.524 (S)		
Benzo[ghi]perylene	191-24-2	ND		0.539 (S)		
2-Methylnaphthalene	91-57-6		1.04	0.956 (S)	0.78	1.008
1-Methylnaphthalene	90-12-0	ND		1.05 (S)		
C1-Naphthalenes			1.04	0.956 (S)		
Biphenyl	92-52-4	ND		0.887 (S)		
C1-Biphenyls			3.50	0.658 (S)		
C2-Biphenyls			8.03	0.629 (S)		
C2-Naphthalenes			6.54	1.60 (S)		
1,2-Dimethylnaphthalene	573-98-8	ND		1.60 (S)		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

COMPOUND	CAS NO.	LAB FLAG [1]	CONC. FOUND	REPORTING LIMIT (RL)[2]	ION ABUND. RATIO	RRT
2,6-Dimethylnaphthalene	581-42-0	ND		1.21 (S)		
C3-Naphthalenes		ND		0.869 (S)		
2,3,6-Trimethylnaphthalene	829-26-5	ND		0.885 (S)		
2,3,5-Trimethylnaphthalene	2245-38-7	ND		0.854 (S)		
C4-Naphthalenes		ND		0.891 (S)		
C1-Acenaphthenes		ND		0.830 (S)		
C1-Fluorenes			0.860	0.808 (S)		
1,7-Dimethylfluorene	442-66-0	ND		1.01 (S)		
C2-Fluorenes			3.89	1.01 (S)		
C3-Fluorenes		ND		1.24 (S)		
Dibenzothiophene	132-65-0	ND		0.482 (S)		
C1-Dibenzothiophenes		ND		0.468 (S)		
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3	ND		0.468 (S)		
C2-Dibenzothiophenes		ND		0.904 (S)		
2,4-Dimethyldibenzothiophene	31317-18-7	ND		0.904 (S)		
4,6-Dimethyldibenzothiophene	1207-12-1	ND		0.726 (S)		
C3-Dibenzothiophenes		ND		0.781 (S)		
C4-Dibenzothiophenes		ND		0.945 (S)		
3-Methylphenanthrene	832-71-3	ND		0.975 (S)		
2-Methylphenanthrene	2531-84-2	ND		0.945 (S)		
2-Methylanthracene	613-12-7	ND		1.03 (S)		
9/4-Methylphenanthrene	883-20-5/832-64-4	ND		0.975 (S)		
1-Methylphenanthrene	832-69-9	ND		0.956 (S)		
3,6-Dimethylphenanthrene	1576-67-6	ND		0.784 (S)		
2,6-Dimethylphenanthrene	17980-16-4	ND		0.808 (S)		
1,7-Dimethylphenanthrene	483-87-4	ND		0.834 (S)		
1,8-Dimethylphenanthrene	7372-87-4	ND		0.808 (S)		
C3-Phenanthrenes/Anthracenes		ND		0.613 (S)		
1,2,6-Trimethylphenanthrene	30436-55-6	ND		0.613 (S)		
Retene	483-65-8	ND		2.12 (S)		
C4-Phenanthrenes/Anthracenes		ND		2.12 (S)		
C1-Fluoranthenes/Pyrenes		ND		0.697 (S)		
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	ND		0.697 (S)		
C2-Fluoranthenes/Pyrenes		ND		0.606 (S)		
C3-Fluoranthenes/Pyrenes		ND		0.697 (S)		
C4-Fluoranthenes/Pyrenes		ND		0.546 (S)		
C1-Benzo[a]anthracenes/Chrysenes [4]			0.621	0.448 (S)		
5/6-Methylchrysene	3697-24-3/1705-85-7	ND		0.471 (S)		
1-Methylchrysene	3351-28-8	ND		0.427 (S)		
C2-Benzo[a]anthracenes/Chrysenes [4]		ND		0.602 (S)		
5,9-Dimethylchrysene	139493-40-6	ND		0.602 (S)		
C3-Benzo[a]anthracenes/Chrysenes [4]		ND		0.602 (S)		
C4-Benzo[a]anthracenes/Chrysenes [4]		ND		0.554 (S)		
C1-Benzofluoranthenes/Benzopyrenes		ND		0.855 (S)		
7-Methylbenzo[a]pyrene	63041-77-0	ND		0.855 (S)		
C2-Benzofluoranthenes/Benzopyrenes		ND		0.855 (S)		
1,4,6,7-Tetramethylnaphthalene	13764-18-6	ND		0.891 (S)		
Anthracene d-10		NDR	12.6	1.17 (S)	0.23	1.008
Fluoranthene d-10	93951-69-0		4.34	0.504 (S)	0.16	0.834
Dibenzo[a,h]anthracene d-14	13250-98-1	ND		0.616 (S)		

(1) Where applicable, custom lab flags have been used on this report; ND = not detected at RL; NDR = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration.
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.
(3) May co-elute with Cyclopenta(cd)pyrene.
(4) May co-elute with Triphenylene.
(5) May co-elute with Dibenz[a,c]anthracene.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.
Signed: _____Matthew Ou_____

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Report Filename: PAH_PAH_LO_LPAHF_WG92967-101_Form1A_PH5H1333.D_SJ3582417.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

CLIENT SAMPLE NO.
Lab Blank
Sample Collection:
N/A

Form 2

POLYAROMATIC HYDROCARBON ANALYSIS REPORT

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.	N/A		
Contract No.:	4608	**Lab Sample I.D.:**	WG92967-101
Matrix:	SOLVENT	**Sample Size:**	1 sample
Sample Receipt Date:	N/A	**Initial Calibration Date:**	05-Feb-2025
Extraction Date:	24-Feb-2025	**Instrument ID:**	LR GC/MS
Analysis Date:	18-Mar-2025 **Time:** 14:21:00	**GC Column ID:**	RTX5
Extract Volume (uL):	500	**Sample Data Filename:**	**PH5H1333.D**
Injection Volume (uL):	1.0	**Blank Data Filename:**	PH5H1333.D
Dilution Factor:	N/A	**Cal. Ver. Data Filename:**	PH5H1329.D
Concentration Units:	ng absolute		

This page is part of a total report that contains information necessary for accreditation compliance.
This test is not CALA accredited. Sample results relate only to the sample tested.

LABELED COMPOUND	LAB FLAG [1]	SPIKE CONC.	CONC. FOUND	R(%) [2]	ION ABUND. RATIO	RRT
Naphthalene d-8		4010	1810	45.2	0.09	0.611
2-Methylnaphthalene d-10		4040	2100	51.9	0.19	0.756
Biphenyl d-10		4010	2250	56.1		0.869
2,6-Dimethylnaphthalene d-12		4020	2280	56.8	0.66	0.896
Acenaphthylene d-8		4020	2280	56.8	0.16	0.961
Dibenzothiophene d-8		4010	2330	58.1	0.08	0.792
Phenanthrene d-10		4010	2590	64.6	0.14	0.808
Benzo[a]anthracene d-12		4000	3490	87.3	0.22	1.164
Chrysene d-12		3220	2980	92.6	0.25	1.169
Benzo[b]fluoranthene d-12		3990	3490	87.5	0.19	0.957
Benzo[k]fluoranthene d-12		3910	3510	89.6	0.18	0.961
Benzo[a]pyrene d-12		4010	3480	86.8	0.19	1.009
Perylene d-12		4000	3460	86.5	0.23	1.024
Indeno[1,2,3-cd]pyrene d-12		3970	3380	85.1	0.17	1.205
Benzo[ghi]perylene d-12		3980	3380	84.9	0.19	1.236

(1) Where applicable, custom lab flags have been used on this report.
(2) R% = percent recovery.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

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Report Filename: PAH_PAH_LO_LPAHF_WG92967-101_Form2_PH5H1333.D_SJ3582417.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 8A

POLYAROMATIC HYDROCARBON ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4608 **OPR Data Filename:** **PH5H1330.D**

Matrix: SOLVENT **Lab Sample I.D.:** WG92967-102

Extraction Date: 24-Feb-2025 **Analysis Date:** 18-Mar-2025 **Time:** 11:53:00

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON 100 uL EXTRACT.

COMPOUND	CAS NO.	LAB FLAG [1]	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
Naphthalene	91-20-3		0.07	39500	39900	27700 - 51400	101
Acenaphthylene	208-96-8		0.20	39700	38700	27800 - 55600	97.5
Acenaphthene	83-32-9		1.12	39700	41700	27800 - 51600	105
2-Methylfluorene	1430-97-3		1.18	40000	36500	20000 - 60000	91.2
Fluorene	86-73-7		0.97	39700	30800	23800 - 55600	77.7
Phenanthrene	85-01-8		0.19	40400	40500	28300 - 52600	100
Anthracene	120-12-7		0.18	40100	40400	28100 - 52100	101
Fluoranthene	206-44-0	N	0.20	39400	59400	27600 - 51300	151
Pyrene	129-00-0	N	0.20	39600	59900	27700 - 51500	151
Benz[a]anthracene	56-55-3		0.26	40200	41500	28100 - 52300	103
Chrysene	218-01-9		0.29	40400	40700	28300 - 52500	101
Benzo[b]fluoranthene	205-99-2		0.22	40000	41000	28000 - 52100	102
Benzo[j,k]fluoranthenes			0.22	40300	40900	28200 - 52400	101
Benzo[e]pyrene	192-97-2		0.22	40000	43200	28000 - 52000	108
Benzo[a]pyrene	50-32-8		0.22	40200	41400	28100 - 52200	103
Perylene	198-55-0		0.22	40000	41500	28000 - 52000	104
Dibenz[a,h]anthracene	53-70-3		0.15	40400	42800	28300 - 52500	106
Indeno[1,2,3-cd]pyrene	193-39-5		0.20	40400	42000	28300 - 52500	104
Benzo[ghi]perylene	191-24-2		0.22	40100	41700	28100 - 52100	104
2-Methylnaphthalene	91-57-6		0.89	40000	40100	28000 - 52000	100
1-Methylnaphthalene	90-12-0		0.92	40100	40800	28000 - 52100	102
Biphenyl	92-52-4		0.27	39800	40100	27900 - 51800	101
1,2-Dimethylnaphthalene	573-98-8		1.23	39900	41900	23900 - 55900	105
2,6-Dimethylnaphthalene	581-42-0		0.65	40100	40100	28100 - 52200	99.8
2,3,6-Trimethylnaphthalene	829-26-5		0.85	39900	46600	20000 - 59900	117
2,3,5-Trimethylnaphthalene	2245-38-7		0.85	40000	46200	20000 - 60100	115
1,7-Dimethylfluorene	442-66-0		0.07	39800	47800	19900 - 59700	120
Dibenzothiophene	132-65-0		0.08	40000	40500	24000 - 55900	101
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		0.70	40200	49000	20100 - 60200	122
4,6-Dimethyldibenzothiophene	1207-12-1		0.15	40000	57400	20000 - 59900	144
2-Methylphenanthrene	2531-84-2		0.57	39800	50300	19900 - 59700	126
2-Methylanthracene	613-12-7		0.50	40000	47600	20000 - 60000	119
1-Methylphenanthrene	832-69-9		0.59	40000	53100	20000 - 60100	132
3,6-Dimethylphenanthrene	1576-67-6		0.33	40200	58600	20100 - 60200	146
1,7-Dimethylphenanthrene	483-87-4	N	0.31	39000	60700	19500 - 58500	156

COMPOUND	CAS NO.	LAB FLAG [1]	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
1,2,6-Trimethylphenanthrene	30436-55-6	N	0.55	40000	68200	20000 - 60000	170
Retene	483-65-8	N	1.50	40000	71100	20000 - 60000	178
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6	N	1.04	40300	68600	20100 - 60400	170
5/6-Methylchrysene	3697-24-3/1705-85-7			40000	42000	20000 - 60100	105
1-Methylchrysene	3351-28-8			39900	41400	19900 - 59800	104
5,9-Dimethylchrysene	139493-40-6			40200	42800	20100 - 60200	107
7-Methylbenzo[a]pyrene	63041-77-0			40000	41700	20000 - 59900	104
1,4,6,7-Tetramethylnaphthalene	13764-18-6		0.03	39900	53400	19900 - 79800	134
Anthracene d-10			0.13	39800	37000	27900 - 51800	92.8
Fluoranthene d-10	93951-69-0		0.16	39800	35500	27900 - 51700	89.2
Dibenzo[a,h]anthracene d-14	13250-98-1		0.24	38400	37800	26900 - 49900	98.4

(1) Where applicable, custom lab flags have been used on this report; N = authentic recovery in the OPR is not within method/contract control limits.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Matthew Ou_____

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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SGS AXYS METHOD MLA-021 Rev 12

Form 8B

POLYAROMATIC HYDROCARBON ONGOING PRECISION AND RECOVERY (OPR)

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4608 **OPR Data Filename:** **PH5H1330.D**

Matrix: SOLVENT **Lab Sample I.D.:** WG92967-102

Extraction Date: 24-Feb-2025 **Analysis Date:** 18-Mar-2025 **Time:** 11:53:00

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT, BASED ON 100 uL EXTRACT.

LABELED COMPOUND	CAS NO.	LAB FLAG [1]	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (ng/mL)	% RECOVERY
Naphthalene d-8	1146-65-2		0.09	40100	11300	6020-52100	28.2
2-Methylnaphthalene d-10	7297-45-2		0.19	40400	12900	8080-52500	31.8
Biphenyl d-10	1486-01-7			40100	13900	6020-52100	34.6
2,6-Dimethylnaphthalene d-12	350820-12-1		0.65	40200	14200	8040-52300	35.4
Acenaphthylene d-8	93951-97-4		0.16	40200	14500	8040-52300	36.1
Dibenzothiophene d-8	33262-29-2		0.08	40100	18300	12000-52100	45.7
Phenanthrene d-10	1517-22-2		0.14	40100	20800	12000-52100	52.0
Benzo[a]anthracene d-12	1718-53-2		0.22	40000	34700	12000-52000	86.8
Chrysene d-12	1719-03-5		0.25	32200	29100	9650-41800	90.5
Benzo[b]fluoranthene d-12	93951-98-5		0.19	39900	34400	12000-51900	86.2
Benzo[k]fluoranthene d-12	93952-01-3		0.18	39100	34500	11700-50800	88.2
Benzo[a]pyrene d-12	63466-71-7		0.19	40100	34100	12000-52100	85.0
Perylene d-12	1520-96-3		0.23	40000	33400	12000-52000	83.6
Indeno[1,2,3-cd]pyrene d-12	203578-33-0		0.17	39700	32800	11900-51600	82.5
Benzo[ghi]perylene d-12	93951-66-7		0.19	39800	33200	11900-51700	83.5

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Matthew Ou

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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SGS AXYS METHOD MLA-021 Rev 12

Form 3A

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

		RELATIVE RESPONSE (RR)								
COMPOUND	**LAB FLAG 1**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**MEAN RR**	**CV (%RSD)[2]**
Naphthalene			1.15	1.19	1.23	1.22	1.22		1.20	2.93
Acenaphthylene			1.19	1.24	1.27	1.26	1.26		1.24	2.76
Acenaphthene			0.66	0.69	0.71	0.71	0.71		0.69	2.93
2-Methylfluorene			0.52	0.54	0.55	0.57	0.57		0.55	4.03
Fluorene			0.75	0.80	0.82	0.82	0.82		0.80	3.66
Phenanthrene			1.15	1.21	1.25	1.22	1.21		1.21	2.99
Anthracene			1.16	1.22	1.24	1.24	1.25		1.22	3.07
Fluoranthene			1.25	1.30	1.38	1.33	1.34		1.32	3.60
Pyrene			1.29	1.35	1.41	1.37	1.37		1.36	3.25
Benz[a]anthracene			1.09	1.15	1.15	1.18	1.16		1.15	3.01
Chrysene			1.06	1.09	1.13	1.13	1.11		1.10	2.48
Benzo[b]fluoranthene			1.32	1.31	1.32	1.29	1.29		1.31	1.08
Benzo[j,k]fluoranthenes			1.15	1.18	1.23	1.23	1.23		1.20	2.88
Benzo[e]pyrene			1.02	1.08	1.16	1.15	1.15		1.11	5.45
Benzo[a]pyrene			1.13	1.17	1.20	1.21	1.22		1.18	3.13
Perylene			1.03	1.07	1.13	1.14	1.15		1.10	4.44
Dibenz[a,h]anthracene			1.09	1.15	1.20	1.20	1.20		1.17	4.24
Indeno[1,2,3-cd]pyrene			1.15	1.15	1.19	1.17	1.17		1.16	1.36
Benzo[ghi]perylene			1.17	1.22	1.26	1.26	1.25		1.23	3.02
2-Methylnaphthalene			1.15	1.20	1.24	1.22	1.23		1.21	3.10
1-Methylnaphthalene			1.05	1.09	1.11	1.11	1.12		1.09	2.52
Biphenyl			1.06	1.10	1.12	1.12	1.12		1.10	2.37
C1-Biphenyls			1.06	1.10	1.12	1.12	1.12		1.10	2.37
C2-Biphenyls			1.06	1.10	1.12	1.12	1.12		1.10	2.37
1,2-Dimethylnaphthalene			0.85	0.86	0.88	0.89	0.89		0.87	2.08
2,6-Dimethylnaphthalene			1.09	1.14	1.18	1.17	1.18		1.15	3.17
C3-Naphthalenes			1.05	1.09	1.12	1.13	1.14		1.10	3.18
2,3,6-Trimethylnaphthalene			1.04	1.07	1.10	1.11	1.11		1.09	2.91
2,3,5-Trimethylnaphthalene			1.07	1.10	1.15	1.15	1.16		1.12	3.45
C4-Naphthalenes			1.01	1.05	1.09	1.11	1.12		1.08	4.03
C1-Acenaphthenes			0.66	0.69	0.71	0.71	0.71		0.69	2.93
C1-Fluorenes			0.52	0.54	0.55	0.57	0.57		0.55	4.03
1,7-Dimethylfluorene			0.52	0.53	0.54	0.55	0.55		0.54	2.37
C2-Fluorenes			0.52	0.53	0.54	0.55	0.55		0.54	2.37
C3-Fluorenes			0.52	0.53	0.54	0.55	0.55		0.54	2.37
Dibenzothiophene			1.11	1.16	1.19	1.17	1.15		1.16	2.71
2/3-Methyldibenzothiophenes			0.84	0.85	0.90	0.88	0.87		0.87	2.66
C2-Dibenzothiophenes			0.59	0.60	0.62	0.64	0.64		0.62	3.09

COMPOUND	LAB FLAG 1	RELATIVE RESPONSE (RR) CS0	CS1	CS2	CS3	CS4	CS5	CS6	MEAN RR	CV (%RSD)[2]
2,4-Dimethyldibenzothiophene			0.59	0.60	0.62	0.64	0.64		0.62	3.09
4,6-Dimethyldibenzothiophene			0.74	0.76	0.79	0.78	0.78		0.77	2.81
C3-Dibenzothiophenes			0.59	0.60	0.62	0.64	0.64		0.62	3.09
C4-Dibenzothiophenes			0.59	0.60	0.62	0.64	0.64		0.62	3.09
3-Methylphenanthrene			0.81	0.85	0.89	0.88	0.89		0.86	3.96
2-Methylphenanthrene			0.84	0.88	0.92	0.91	0.90		0.89	3.34
2-Methylanthracene			0.76	0.80	0.84	0.84	0.85		0.82	4.69
9/4-Methylphenanthrene			0.81	0.85	0.89	0.88	0.89		0.86	3.96
1-Methylphenanthrene			0.82	0.88	0.91	0.90	0.90		0.88	4.02
3,6-Dimethylphenanthrene			0.71	0.75	0.78	0.77	0.78		0.76	3.77
2,6-Dimethylphenanthrene			0.69	0.72	0.75	0.75	0.76		0.74	3.86
1,7-Dimethylphenanthrene			0.67	0.70	0.73	0.73	0.74		0.71	4.11
1,8-Dimethylphenanthrene			0.69	0.72	0.75	0.75	0.76		0.74	3.86
C3-Phenanthrenes/Anthracenes			0.66	0.72	0.74	0.75	0.76		0.73	5.44
1,2,6-Trimethylphenanthrene			0.66	0.72	0.74	0.75	0.76		0.73	5.44
Retene			0.25	0.28	0.28	0.29	0.30		0.28	6.79
C4-Phenanthrenes/Anthracenes			0.25	0.28	0.28	0.29	0.30		0.28	6.79
3-Methylfluoranthene/Benzo[a]fluorene			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C2-Fluoranthenes/Pyrenes			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C3-Fluoranthenes/Pyrenes			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C4-Fluoranthenes/Pyrenes			0.76	0.80	0.84	0.84	0.85		0.82	4.88
C1-Benzo[a]anthracenes/Chrysenes			0.77	0.79	0.82	0.82	0.84		0.81	3.30
5/6-Methylchrysene			0.73	0.76	0.78	0.78	0.79		0.77	3.34
1-Methylchrysene			0.81	0.83	0.86	0.87	0.88		0.85	3.37
C2-Benzo[a]anthracenes/Chrysenes			0.64	0.67	0.69	0.70	0.72		0.68	4.32
5,9-Dimethylchrysene			0.64	0.67	0.69	0.70	0.72		0.68	4.32
C3-Benzo[a]anthracenes/Chrysenes			0.64	0.67	0.69	0.70	0.72		0.68	4.32
C4-Benzo[a]anthracenes/Chrysenes			0.64	0.67	0.69	0.70	0.72		0.68	4.32
C1-Benzofluoranthenes/Benzopyrenes			0.82	0.85	0.90	0.91	0.94		0.88	5.24
7-Methylbenzo[a]pyrene			0.82	0.85	0.90	0.91	0.94		0.88	5.24
C2-Benzofluoranthenes/Benzopyrenes			0.82	0.85	0.90	0.91	0.94		0.88	5.24
1,4,6,7-Tetramethylnaphthalene			1.01	1.05	1.09	1.11	1.12		1.08	4.03
Anthracene d-10			1.07	1.09	1.08	1.09	1.09		1.08	0.61
Fluoranthene d-10			1.02	1.02	1.01	1.03	1.04		1.03	0.86
Dibenzo[a,h]anthracene d-14			0.93	0.94	0.95	0.96	0.96		0.95	1.30

(1) Where applicable, custom lab flags have been used on this report.
(2) QC limit is 20% for native compounds with a labeled analog, 35% for those without a labeled analog.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Simin Yassari_____

For Axys Internal Use Only [XSL Template: Form3A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3A_GS114416.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 3B

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION RELATIVE RESPONSES

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

		RELATIVE RESPONSE (RR)								
LABELED COMPOUND	**LAB FLAG [1]**	**CS0**	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CS6**	**MEAN RR**	**CV (%RSD)[2]**
Naphthalene d-8			1.62	1.62	1.61	1.60	1.60		1.61	0.57
2-Methylnaphthalene d-10			1.07	1.06	1.06	1.06	1.06		1.06	0.49
Biphenyl d-10			1.41	1.41	1.41	1.40	1.40		1.40	0.27
2,6-Dimethylnaphthalene d-12			1.01	1.00	1.00	1.00	1.00		1.00	0.44
Acenaphthylene d-8			1.71	1.71	1.71	1.69	1.71		1.70	0.42
Dibenzothiophene d-8			0.91	0.90	0.89	0.91	0.90		0.90	1.03
Phenanthrene d-10			0.90	0.89	0.88	0.89	0.88		0.89	0.80
Benzo[a]anthracene d-12			0.99	0.99	0.99	0.99	0.99		0.99	0.22
Chrysene d-12			1.00	1.01	1.01	1.01	1.02		1.01	0.70
Benzo[b]fluoranthene d-12			1.00	0.99	0.99	1.01	1.01		1.00	0.88
Benzo[k]fluoranthene d-12			1.06	1.07	1.06	1.07	1.08		1.07	0.93
Benzo[a]pyrene d-12			1.02	1.02	1.02	1.04	1.05		1.03	1.14
Perylene d-12			1.04	1.04	1.04	1.05	1.06		1.04	0.79
Indeno[1,2,3-cd]pyrene d-12			1.12	1.12	1.13	1.14	1.16		1.13	1.36
Benzo[ghi]perylene d-12			1.04	1.04	1.05	1.06	1.07		1.05	1.23

(1) Where applicable, custom lab flags have been used on this report.
(2) QC limit is 35% for labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Simin Yassari_____

For Axys Internal Use Only [XSL Template: Form3B.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3B_GS114416.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 3C

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

COMPOUND	LAB FLAG [1]	M/Z's FORMING RATIO	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6
Naphthalene		**128,102**		0.07	0.06	0.07	0.07	0.07	
Acenaphthylene		**152,151**		0.21	0.19	0.20	0.20	0.20	
Acenaphthene		**154,153**		1.14	1.14	1.13	1.13	1.12	
2-Methylfluorene		**180,165**		1.20	1.20	1.21	1.19	1.19	
Fluorene		**166,165**		0.98	0.97	0.97	0.97	0.97	
Phenanthrene		**178,176**		0.19	0.19	0.18	0.19	0.19	
Anthracene		**178,176**		0.19	0.18	0.18	0.18	0.18	
Fluoranthene		**202,200**		0.21	0.20	0.19	0.20	0.20	
Pyrene		**202,200**		0.21	0.21	0.20	0.20	0.21	
Benz[a]anthracene		**228,226**		0.28	0.27	0.27	0.26	0.26	
Chrysene		**228,226**		0.28	0.29	0.29	0.29	0.29	
Benzo[b]fluoranthene		**252,253**		0.25	0.23	0.22	0.22	0.22	
Benzo[j,k]fluoranthenes		**252,253**		0.23	0.23	0.21	0.22	0.22	
Benzo[e]pyrene		**252,253**		0.21	0.23	0.21	0.22	0.22	
Benzo[a]pyrene		**252,253**		0.22	0.22	0.22	0.21	0.22	
Perylene		**252,253**		0.20	0.22	0.22	0.22	0.22	
Dibenz[a,h]anthracene		**278,139**		0.16	0.15	0.14	0.15	0.15	
Indeno[1,2,3-cd]pyrene		**276,138**		0.24	0.21	0.19	0.19	0.20	
Benzo[ghi]perylene		**276,138**		0.21	0.21	0.20	0.20	0.21	
2-Methylnaphthalene		**142,141**		0.89	0.91	0.89	0.89	0.89	
1-Methylnaphthalene		**142,141**		0.90	0.93	0.93	0.92	0.92	
Biphenyl		**154,152**		0.28	0.28	0.27	0.28	0.28	
1,2-Dimethylnaphthalene		**156,141**		1.17	1.21	1.25	1.24	1.24	
2,6-Dimethylnaphthalene		**156,141**		0.66	0.66	0.65	0.66	0.66	
2,3,6-Trimethylnaphthalene		**170,155**		0.86	0.86	0.86	0.86	0.86	
2,3,5-Trimethylnaphthalene		**170,155**		0.86	0.85	0.85	0.86	0.85	
1,7-Dimethylfluorene		**194,177**		0.08	0.08	0.08	0.08	0.07	
Dibenzothiophene		**184,152**		0.08	0.08	0.08	0.08	0.08	
2/3-Methyldibenzothiophenes		**198,197**		0.71	0.72	0.70	0.70	0.70	
2,4-Dimethyldibenzothiophene		**212,197**		0.52	0.51	0.49	0.49	0.49	
4,6-Dimethyldibenzothiophene		**212,197**		0.17	0.17	0.15	0.15	0.15	
3-Methylphenanthrene		**192,191**							
2-Methylphenanthrene		**192,191**		0.59	0.58	0.57	0.57	0.58	
2-Methylanthracene		**192,191**		0.50	0.50	0.49	0.50	0.49	
9/4-Methylphenanthrene		**192,191**							
1-Methylphenanthrene		**192,191**		0.62	0.58	0.59	0.59	0.59	
3,6-Dimethylphenanthrene		**206,191**		0.35	0.33	0.33	0.33	0.34	
2,6-Dimethylphenanthrene		**206,191**							
1,7-Dimethylphenanthrene		**206,191**		0.33	0.32	0.31	0.31	0.32	

COMPOUND	LAB FLAG [1]	M/Z's FORMING RATIO	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6
1,8-Dimethylphenanthrene		**206,191**							
1,2,6-Trimethylphenanthrene		**220,205**		0.56	0.56	0.56	0.55	0.55	
Retene		**234,219**		1.61	1.47	1.55	1.52	1.52	
3-Methylfluoranthene/Benzo[a]fluorene		**216,215**		1.05	1.04	1.05	1.05	1.05	
5/6-Methylchrysene		**242**							
1-Methylchrysene		**242**							
5,9-Dimethylchrysene		**256**							
7-Methylbenzo[a]pyrene		**266**							
1,4,6,7-Tetramethylnaphthalene		**184,139**		0.03	0.03	0.03	0.03	0.03	
Anthracene d-10		**188,184**		0.13	0.13	0.13	0.13	0.13	
Fluoranthene d-10		**212,208**		0.16	0.16	0.16	0.16	0.16	
Dibenzo[a,h]anthracene d-14		**292,288**		0.23	0.22	0.23	0.22	0.23	

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Simin Yassari_____

For Axys Internal Use Only [XSL Template: Form3C.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3C_GS114416.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 3D

POLYAROMATIC HYDROCARBON INITIAL CALIBRATION ION ABUNDANCE RATIOS

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 05-Feb-2025

Instrument ID: LR GC/MS

GC Column ID: RTX5

CS0 Data Filename: N/A

CS1 Data Filename: PH5H0633.D

CS2 Data Filename: PH5H0634.D

CS3 Data Filename: PH5H0635.D

CS4 Data Filename: PH5H0637.D

CS5 Data Filename: PH5H0636.D

CS6 Data Filename: N/A

LABELED COMPOUND	LAB FLAG[1]	M/Z's FORMING RATIO	ION ABUNDANCE RATIO CS0	CS1	CS2	CS3	CS4	CS5	CS6
Naphthalene d-8		**136,134**		0.09	0.09	0.09	0.09	0.09	
2-Methylnaphthalene d-10		**152,151**		0.19	0.19	0.19	0.19	0.19	
Biphenyl d-10		**164**							
2,6-Dimethylnaphthalene d-12		**168,150**		0.67	0.67	0.67	0.68	0.67	
Acenaphthylene d-8		**160,158**		0.16	0.16	0.16	0.16	0.16	
Dibenzothiophene d-8		**192,160**		0.08	0.08	0.08	0.08	0.08	
Phenanthrene d-10		**188,184**		0.14	0.14	0.14	0.14	0.14	
Benzo[a]anthracene d-12		**240,236**		0.22	0.22	0.22	0.22	0.22	
Chrysene d-12		**240,236**		0.25	0.25	0.25	0.25	0.25	
Benzo[b]fluoranthene d-12		**264,260**		0.19	0.19	0.19	0.19	0.19	
Benzo[k]fluoranthene d-12		**264,260**		0.18	0.18	0.18	0.18	0.18	
Benzo[a]pyrene d-12		**264,260**		0.19	0.19	0.19	0.19	0.19	
Perylene d-12		**264,260**		0.23	0.23	0.23	0.23	0.23	
Indeno[1,2,3-cd]pyrene d-12		**288,284**		0.17	0.17	0.17	0.17	0.17	
Benzo[ghi]perylene d-12		**288,284**		0.19	0.19	0.19	0.19	0.19	

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Simin Yassari

For Axys Internal Use Only [XSL Template: Form3D.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_05-Feb-2025_PH5H__Form3D_GS114416.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4A

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H1329.D
Instrument ID:	LR GC/MS	**Analysis Date:**	18-Mar-2025
GC Column ID:	RTX5	**Analysis Time:**	11:03:00

COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene	91-20-3		128,102	0.07	0.06-0.08	2020	1480-2470
Acenaphthylene	208-96-8		152,151	0.20	0.16-0.24	1960	1490-2480
Acenaphthene	83-32-9		154,153	1.12	0.90-1.34	1990	1490-2480
2-Methylfluorene	1430-97-3		180,165	1.18	0.94-1.42	2000	1500-2500
Fluorene	86-73-7		166,165	0.97	0.78-1.16	2020	1490-2480
Phenanthrene	85-01-8		178,176	0.19	0.15-0.23	2030	1520-2530
Anthracene	120-12-7		178,176	0.18	0.14-0.22	2000	1500-2510
Fluoranthene	206-44-0		202,200	0.20	0.16-0.24	2000	1480-2470
Pyrene	129-00-0		202,200	0.20	0.16-0.24	2000	1490-2480
Benz[a]anthracene	56-55-3		228,226	0.26	0.21-0.31	2070	1510-2510
Chrysene	218-01-9		228,226	0.29	0.23-0.35	2040	1510-2520
Benzo[b]fluoranthene	205-99-2		252,253	0.21	0.17-0.25	2030	1500-2500
Benzo[j,k]fluoranthenes			252,253	0.22	0.18-0.26	2030	1510-2520
Benzo[e]pyrene	192-97-2		252,253	0.21	0.17-0.25	2070	1500-2500
Benzo[a]pyrene	50-32-8		252,253	0.22	0.18-0.26	2060	1510-2510
Perylene	198-55-0		252,253	0.22	0.18-0.26	2070	1500-2500
Dibenz[a,h]anthracene	53-70-3		278,139	0.15	0.10-0.20	2110	1510-2520
Indeno[1,2,3-cd]pyrene	193-39-5		276,138	0.20	0.13-0.27	2060	1520-2530
Benzo[ghi]perylene	191-24-2		276,138	0.22	0.14-0.30	2090	1500-2510
2-Methylnaphthalene	91-57-6		142,141	0.89	0.71-1.07	2000	1500-2500
1-Methylnaphthalene	90-12-0		142,141	0.92	0.74-1.10	1990	1500-2500
Biphenyl	92-52-4		154,152	0.28	0.22-0.34	2000	1490-2490
1,2-Dimethylnaphthalene	573-98-8		156,141	1.22	0.98-1.46	2000	1500-2490
2,6-Dimethylnaphthalene	581-42-0		156,141	0.65	0.52-0.78	2020	1510-2510
2,3,6-Trimethylnaphthalene	829-26-5		170,155	0.84	0.67-1.01	2010	1500-2490
2,3,5-Trimethylnaphthalene	2245-38-7		170,155	0.85	0.68-1.02	2020	1500-2500
1,7-Dimethylfluorene	442-66-0		194,177	0.07	0.06-0.08	2020	1490-2490
Dibenzothiophene	132-65-0		184,152	0.08	0.06-0.10	2010	1500-2500
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		198,197	0.70	0.56-0.84	2030	1510-2510
2,4-Dimethyldibenzothiophene	31317-18-7		212,197	0.48	0.38-0.58	2080	1500-2500
4,6-Dimethyldibenzothiophene	1207-12-1		212,197	0.15	0.12-0.18	2010	1500-2500
2-Methylphenanthrene	2531-84-2		192,191	0.57	0.46-0.68	1980	1490-2490
2-Methylanthracene	613-12-7		192,191	0.49	0.39-0.59	2080	1500-2500
1-Methylphenanthrene	832-69-9		192,191	0.59	0.47-0.71	2030	1500-2500
3,6-Dimethylphenanthrene	1576-67-6		206,191	0.33	0.26-0.40	2080	1510-2510
1,7-Dimethylphenanthrene	483-87-4		206,191	0.31	0.25-0.37	1990	1460-2440
1,2,6-Trimethylphenanthrene	30436-55-6		220,205	0.55	0.44-0.66	2040	1500-2500
Retene	483-65-8		234,219	1.50	1.20-1.80	2140	1500-2500
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		216,215	1.04	0.83-1.25	2090	1510-2520
5/6-Methylchrysene	3697-24-3/1705-85-7		242	0	N/A	2050	1500-2500
1-Methylchrysene	3351-28-8		242	0	N/A	2020	1500-2490
5,9-Dimethylchrysene	139493-40-6		256	0	N/A	2080	1510-2510
7-Methylbenzo[a]pyrene	63041-77-0		266	0	N/A	2040	1500-2500
1,4,6,7-Tetramethylnaphthalene	13764-18-6		184,139	0.03	0.02-0.04	2020	1500-2490
Anthracene d-10			188,184	0.13	0.10-0.16	2010	1490-2490
Fluoranthene d-10	93951-69-0		212,208	0.16	0.13-0.19	2010	1490-2490

Dibenzo[a,h]anthracene d-14	13250-98-1	292,288	0.24	0.16-0.32	1890	1440-2400

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Victoria Reesor_____

For Axys Internal Use Only [XSL Template: Pest4A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_PH5H1329.D__Form4A_SJ3580822.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4B

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H1329.D
Instrument ID:	LR GC/MS	**Analysis Date:**	18-Mar-2025
GC Column ID:	RTX5	**Analysis Time:**	11:03:00

LABELED COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene d-8	1146-65-2		136,134	0.10	0.08-0.12	1960	1500-2510
2-Methylnaphthalene d-10	7297-45-2		152,151	0.19	0.15-0.23	2010	1520-2530
Biphenyl d-10	1486-01-7		164	0	N/A	2010	1500-2510
2,6-Dimethylnaphthalene d-12	350820-12-1		168,150	0.65	0.52-0.78	2030	1510-2510
Acenaphthylene d-8	93951-97-4		160,158	0.16	0.13-0.19	2020	1510-2510
Dibenzothiophene d-8	33262-29-2		192,160	0.08	0.06-0.10	1960	1500-2510
Phenanthrene d-10	1517-22-2		188,184	0.14	0.11-0.17	1980	1500-2510
Benzo[a]anthracene d-12	1718-53-2		240,236	0.22	0.18-0.26	1990	1500-2500
Chrysene d-12	1719-03-5		240,236	0.25	0.20-0.30	1630	1210-2010
Benzo[b]fluoranthene d-12	93951-98-5		264,260	0.19	0.15-0.23	1990	1500-2490
Benzo[k]fluoranthene d-12	93952-01-3		264,260	0.18	0.14-0.22	2000	1470-2440
Benzo[a]pyrene d-12	63466-71-7		264,260	0.19	0.15-0.23	2020	1500-2510
Perylene d-12	1520-96-3		264,260	0.23	0.18-0.28	1990	1500-2500
Indeno[1,2,3-cd]pyrene d-12	203578-33-0		288,284	0.17	0.11-0.23	1900	1490-2480
Benzo[ghi]perylene d-12	93951-66-7		288,284	0.19	0.12-0.26	1890	1490-2490

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Victoria Reesor

For Axys Internal Use Only [XSL Template: Pest4B.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_PH5H1329.D__Form4B_SJ3580822.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4A

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H1343.D
Instrument ID:	LR GC/MS	**Analysis Date:**	18-Mar-2025
GC Column ID:	RTX5	**Analysis Time:**	21:07:00

COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene	91-20-3		128,102	0.07	0.06-0.08	2010	1480-2470
Acenaphthylene	208-96-8		152,151	0.20	0.16-0.24	1960	1490-2480
Acenaphthene	83-32-9		154,153	1.12	0.90-1.34	1990	1490-2480
2-Methylfluorene	1430-97-3		180,165	1.18	0.94-1.42	2020	1500-2500
Fluorene	86-73-7		166,165	0.97	0.78-1.16	2030	1490-2480
Phenanthrene	85-01-8		178,176	0.19	0.15-0.23	2010	1520-2530
Anthracene	120-12-7		178,176	0.18	0.14-0.22	2000	1500-2510
Fluoranthene	206-44-0		202,200	0.20	0.16-0.24	2040	1480-2470
Pyrene	129-00-0		202,200	0.20	0.16-0.24	2010	1490-2480
Benz[a]anthracene	56-55-3		228,226	0.26	0.21-0.31	2040	1510-2510
Chrysene	218-01-9		228,226	0.29	0.23-0.35	2030	1510-2520
Benzo[b]fluoranthene	205-99-2		252,253	0.22	0.18-0.26	1990	1500-2500
Benzo[j,k]fluoranthenes			252,253	0.22	0.18-0.26	2070	1510-2520
Benzo[e]pyrene	192-97-2		252,253	0.22	0.18-0.26	2070	1500-2500
Benzo[a]pyrene	50-32-8		252,253	0.22	0.18-0.26	2070	1510-2510
Perylene	198-55-0		252,253	0.22	0.18-0.26	2070	1500-2500
Dibenz[a,h]anthracene	53-70-3		278,139	0.15	0.10-0.20	2080	1510-2520
Indeno[1,2,3-cd]pyrene	193-39-5		276,138	0.20	0.13-0.27	2040	1520-2530
Benzo[ghi]perylene	191-24-2		276,138	0.21	0.14-0.28	2060	1500-2510
2-Methylnaphthalene	91-57-6		142,141	0.89	0.71-1.07	2010	1500-2500
1-Methylnaphthalene	90-12-0		142,141	0.92	0.74-1.10	2000	1500-2500
Biphenyl	92-52-4		154,152	0.28	0.22-0.34	1990	1490-2490
1,2-Dimethylnaphthalene	573-98-8		156,141	1.22	0.98-1.46	2000	1500-2490
2,6-Dimethylnaphthalene	581-42-0		156,141	0.65	0.52-0.78	2020	1510-2510
2,3,6-Trimethylnaphthalene	829-26-5		170,155	0.85	0.68-1.02	2000	1500-2490
2,3,5-Trimethylnaphthalene	2245-38-7		170,155	0.86	0.69-1.03	2010	1500-2500
1,7-Dimethylfluorene	442-66-0		194,177	0.07	0.06-0.08	2020	1490-2490
Dibenzothiophene	132-65-0		184,152	0.08	0.06-0.10	2000	1500-2500
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		198,197	0.70	0.56-0.84	2030	1510-2510
2,4-Dimethyldibenzothiophene	31317-18-7		212,197	0.47	0.38-0.56	2110	1500-2500
4,6-Dimethyldibenzothiophene	1207-12-1		212,197	0.15	0.12-0.18	2020	1500-2500
2-Methylphenanthrene	2531-84-2		192,191	0.57	0.46-0.68	2000	1490-2490
2-Methylanthracene	613-12-7		192,191	0.49	0.39-0.59	2060	1500-2500
1-Methylphenanthrene	832-69-9		192,191	0.59	0.47-0.71	2040	1500-2500
3,6-Dimethylphenanthrene	1576-67-6		206,191	0.33	0.26-0.40	2100	1510-2510
1,7-Dimethylphenanthrene	483-87-4		206,191	0.31	0.25-0.37	2030	1460-2440
1,2,6-Trimethylphenanthrene	30436-55-6		220,205	0.54	0.43-0.65	2080	1500-2500
Retene	483-65-8		234,219	1.50	1.20-1.80	2160	1500-2500
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		216,215	1.04	0.83-1.25	2130	1510-2520
5/6-Methylchrysene	3697-24-3/1705-85-7		242	0	N/A	2060	1500-2500
1-Methylchrysene	3351-28-8		242	0	N/A	2040	1500-2490
5,9-Dimethylchrysene	139493-40-6		256	0	N/A	2090	1510-2510
7-Methylbenzo[a]pyrene	63041-77-0		266	0	N/A	2070	1500-2500
1,4,6,7-Tetramethylnaphthalene	13764-18-6		184,139	0.03	0.02-0.04	2040	1500-2490
Anthracene d-10			188,184	0.12	0.10-0.14	1980	1490-2490
Fluoranthene d-10	93951-69-0		212,208	0.15	0.12-0.18	1970	1490-2490

Dibenzo[a,h]anthracene d-14	13250-98-1	292,288	0.23	0.15-0.31	1880	1440-2400

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Victoria Reesor_____

For Axys Internal Use Only [XSL Template: Pest4A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_PH5H1343.D__Form4A_SJ3581181.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4B

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H1343.D
Instrument ID:	LR GC/MS	**Analysis Date:**	18-Mar-2025
GC Column ID:	RTX5	**Analysis Time:**	21:07:00

LABELED COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene d-8	1146-65-2		136,134	0.09	0.07-0.11	1970	1500-2510
2-Methylnaphthalene d-10	7297-45-2		152,151	0.19	0.15-0.23	2000	1520-2530
Biphenyl d-10	1486-01-7		164	0	N/A	2000	1500-2510
2,6-Dimethylnaphthalene d-12	350820-12-1		168,150	0.66	0.53-0.79	2020	1510-2510
Acenaphthylene d-8	93951-97-4		160,158	0.16	0.13-0.19	2020	1510-2510
Dibenzothiophene d-8	33262-29-2		192,160	0.08	0.06-0.10	1940	1500-2510
Phenanthrene d-10	1517-22-2		188,184	0.14	0.11-0.17	1960	1500-2510
Benzo[a]anthracene d-12	1718-53-2		240,236	0.22	0.18-0.26	2030	1500-2500
Chrysene d-12	1719-03-5		240,236	0.25	0.20-0.30	1650	1210-2010
Benzo[b]fluoranthene d-12	93951-98-5		264,260	0.19	0.15-0.23	1990	1500-2490
Benzo[k]fluoranthene d-12	93952-01-3		264,260	0.18	0.14-0.22	1970	1470-2440
Benzo[a]pyrene d-12	63466-71-7		264,260	0.19	0.15-0.23	2010	1500-2510
Perylene d-12	1520-96-3		264,260	0.23	0.18-0.28	1990	1500-2500
Indeno[1,2,3-cd]pyrene d-12	203578-33-0		288,284	0.17	0.11-0.23	1940	1490-2480
Benzo[ghi]perylene d-12	93951-66-7		288,284	0.19	0.12-0.26	1930	1490-2490

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Victoria Reesor

For Axys Internal Use Only [XSL Template: Pest4B.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_PH5H1343.D__Form4B_SJ3581181.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4A

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H1499.D
Instrument ID:	LR GC/MS	**Analysis Date:**	25-Mar-2025
GC Column ID:	RTX5	**Analysis Time:**	20:36:00

COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene	91-20-3		128,102	0.07	0.06-0.08	2000	1480-2470
Acenaphthylene	208-96-8		152,151	0.20	0.16-0.24	1980	1490-2480
Acenaphthene	83-32-9		154,153	1.13	0.90-1.36	2040	1490-2480
2-Methylfluorene	1430-97-3		180,165	1.18	0.94-1.42	2060	1500-2500
Fluorene	86-73-7		166,165	0.97	0.78-1.16	2040	1490-2480
Phenanthrene	85-01-8		178,176	0.19	0.15-0.23	2040	1520-2530
Anthracene	120-12-7		178,176	0.18	0.14-0.22	2010	1500-2510
Fluoranthene	206-44-0		202,200	0.20	0.16-0.24	2060	1480-2470
Pyrene	129-00-0		202,200	0.20	0.16-0.24	2060	1490-2480
Benz[a]anthracene	56-55-3		228,226	0.26	0.21-0.31	2090	1510-2510
Chrysene	218-01-9		228,226	0.28	0.22-0.34	2060	1510-2520
Benzo[b]fluoranthene	205-99-2		252,253	0.21	0.17-0.25	2020	1500-2500
Benzo[j,k]fluoranthenes			252,253	0.21	0.17-0.25	2090	1510-2520
Benzo[e]pyrene	192-97-2		252,253	0.21	0.17-0.25	2130	1500-2500
Benzo[a]pyrene	50-32-8		252,253	0.22	0.18-0.26	2080	1510-2510
Perylene	198-55-0		252,253	0.21	0.17-0.25	2080	1500-2500
Dibenz[a,h]anthracene	53-70-3		278,139	0.15	0.10-0.20	2100	1510-2520
Indeno[1,2,3-cd]pyrene	193-39-5		276,138	0.21	0.14-0.28	2090	1520-2530
Benzo[ghi]perylene	191-24-2		276,138	0.21	0.14-0.28	2070	1500-2510
2-Methylnaphthalene	91-57-6		142,141	0.88	0.70-1.06	2020	1500-2500
1-Methylnaphthalene	90-12-0		142,141	0.93	0.74-1.12	2020	1500-2500
Biphenyl	92-52-4		154,152	0.27	0.22-0.32	2000	1490-2490
1,2-Dimethylnaphthalene	573-98-8		156,141	1.23	0.98-1.48	2020	1500-2490
2,6-Dimethylnaphthalene	581-42-0		156,141	0.65	0.52-0.78	2050	1510-2510
2,3,6-Trimethylnaphthalene	829-26-5		170,155	0.85	0.68-1.02	1980	1500-2490
2,3,5-Trimethylnaphthalene	2245-38-7		170,155	0.86	0.69-1.03	2010	1500-2500
1,7-Dimethylfluorene	442-66-0		194,177	0.07	0.06-0.08	2030	1490-2490
Dibenzothiophene	132-65-0		184,152	0.08	0.06-0.10	2010	1500-2500
2/3-Methyldibenzothiophenes	20928-02-3/16587-52-3		198,197	0.70	0.56-0.84	2040	1510-2510
2,4-Dimethyldibenzothiophene	31317-18-7		212,197	0.48	0.38-0.58	2130	1500-2500
4,6-Dimethyldibenzothiophene	1207-12-1		212,197	0.15	0.12-0.18	2040	1500-2500
2-Methylphenanthrene	2531-84-2		192,191	0.57	0.46-0.68	2010	1490-2490
2-Methylanthracene	613-12-7		192,191	0.49	0.39-0.59	2110	1500-2500
1-Methylphenanthrene	832-69-9		192,191	0.59	0.47-0.71	2080	1500-2500
3,6-Dimethylphenanthrene	1576-67-6		206,191	0.33	0.26-0.40	2120	1510-2510
1,7-Dimethylphenanthrene	483-87-4		206,191	0.31	0.25-0.37	2020	1460-2440
1,2,6-Trimethylphenanthrene	30436-55-6		220,205	0.56	0.45-0.67	2020	1500-2500
Retene	483-65-8		234,219	1.51	1.21-1.81	2130	1500-2500
3-Methylfluoranthene/Benzo[a]fluorene	1706-01-0/238-84-6		216,215	1.04	0.83-1.25	2120	1510-2520
5/6-Methylchrysene	3697-24-3/1705-85-7		242	0	N/A	2020	1500-2500
1-Methylchrysene	3351-28-8		242	0	N/A	2010	1500-2490
5,9-Dimethylchrysene	139493-40-6		256	0	N/A	2050	1510-2510
7-Methylbenzo[a]pyrene	63041-77-0		266	0	N/A	2040	1500-2500
1,4,6,7-Tetramethylnaphthalene	13764-18-6		184,139	0.03	0.02-0.04	1980	1500-2490
Anthracene d-10			188,184	0.13	0.10-0.16	2000	1490-2490
Fluoranthene d-10	93951-69-0		212,208	0.16	0.13-0.19	2130	1490-2490

Dibenzo[a,h]anthracene d-14	13250-98-1	292,288	0.25	0.16-0.34	1890	1440-2400

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: _____Victoria Reesor_____

For Axys Internal Use Only [XSL Template: Pest4A.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_PH5H1499.D__Form4A_SJ3584679.html; Workgroup: WG92967; Design ID: 5444]

SGS AXYS METHOD MLA-021 Rev 12

Form 4B

POLYAROMATIC HYDROCARBON CALIBRATION VERIFICATION

SGS AXYS ANALYTICAL SERVICES
2045 MILLS RD., SIDNEY, B.C., CANADA
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date:	05-Feb-2025	**VER Data Filename:**	PH5H1499.D
Instrument ID:	LR GC/MS	**Analysis Date:**	25-Mar-2025
GC Column ID:	RTX5	**Analysis Time:**	20:36:00

LABELED COMPOUND	CAS NO.	LAB FLAG [1]	m/e ION CHANNELS	ION ABUND. RATIO	SAMPLE QC LIMITS	CONC. FOUND (ng/mL)	CONC. RANGE (ng/mL)
Naphthalene d-8	1146-65-2		136,134	0.09	0.07-0.11	2050	1500-2510
2-Methylnaphthalene d-10	7297-45-2		152,151	0.19	0.15-0.23	2030	1520-2530
Biphenyl d-10	1486-01-7		164	0	N/A	2010	1500-2510
2,6-Dimethylnaphthalene d-12	350820-12-1		168,150	0.66	0.53-0.79	2000	1510-2510
Acenaphthylene d-8	93951-97-4		160,158	0.16	0.13-0.19	1990	1510-2510
Dibenzothiophene d-8	33262-29-2		192,160	0.08	0.06-0.10	1960	1500-2510
Phenanthrene d-10	1517-22-2		188,184	0.14	0.11-0.17	1970	1500-2510
Benzo[a]anthracene d-12	1718-53-2		240,236	0.22	0.18-0.26	1910	1500-2500
Chrysene d-12	1719-03-5		240,236	0.26	0.21-0.31	1600	1210-2010
Benzo[b]fluoranthene d-12	93951-98-5		264,260	0.19	0.15-0.23	1970	1500-2490
Benzo[k]fluoranthene d-12	93952-01-3		264,260	0.18	0.14-0.22	1970	1470-2440
Benzo[a]pyrene d-12	63466-71-7		264,260	0.19	0.15-0.23	1990	1500-2510
Perylene d-12	1520-96-3		264,260	0.23	0.18-0.28	1980	1500-2500
Indeno[1,2,3-cd]pyrene d-12	203578-33-0		288,284	0.17	0.11-0.23	1900	1490-2480
Benzo[ghi]perylene d-12	93951-66-7		288,284	0.19	0.12-0.26	1940	1490-2490

(1) Where applicable, custom lab flags have been used on this report.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: Victoria Reesor

For Axys Internal Use Only [XSL Template: Pest4B.xsl; Created: 28-Mar-2025 20:37:31; Application: XMLTransformer-1.18.58;
Report Filename: GENERIC-SPECS_PAH_LO_PH5H1499.D__Form4B_SJ3584679.html; Workgroup: WG92967; Design ID: 5444]

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids														Tissue and Tissue Flora							Urine		Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
BFR	BTBPE	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
BFR	DBDPE	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
BFR	HBB	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
BFR	PBEB	SGS AXYS MLA-033	MLA-033					Y												Y						Y														
Bisphenols	Bisphenol A	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol AF	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol B	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol E	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol F	SGS AXYS MLA-113	MLA-113					Y																		Y														
Bisphenols	Bisphenol S	SGS AXYS MLA-113	MLA-113					Y																		Y														
BPA and MPE	4,4'-dihydroxy-2,2-diphenylpropane (Bisphenol A) (BPA)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(3-carboxypropyl) phthalate (MCPP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-2-ethylhexyl phthalate (MEHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-benzyl phthalate (MBzP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-butyl phthalate (MBP) (n + iso)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-cyclohexyl phthalate (MCHP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-ethyl phthalate (MEP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-iso-nonyl phthalate (MiNP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-methyl phthalate (MMP)	SGS AXYS MLA-059	MLA-059																						Y														
BPA and MPE	Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)	SGS AXYS MLA-059	MLA-059																																				
OC Pesticides	"Organochlorine Pesticides and PCBs" category (CA only)	EPA 608	MLA-007																																				
OC Pesticides		EPA 625	MLA-007																																				
OC Pesticides	"Organochlorine Pesticides" category (CA only)	EPA 8081B	MLA-007																																				
OC Pesticides	"Pesticides" category (CA only)	EPA 8270E	MLA-007																																				
OC Pesticides	2,4'-DDD	EPA 625	MLA-007																											Y									
OC Pesticides		EPA 8270E	MLA-007							Y						Y																								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y										
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y			Y		Y							Y				Y						Y				Y									Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007				Y		Y											Y						Y				Y										
OC Pesticides		SGS AXYS MLA-228	MLA-228				Y		Y						Y	Y				Y		Y				Y				Y								Y	Y	
OC Pesticides	2,4'-DDE	EPA 625	MLA-007																											Y									
OC Pesticides		EPA 8270E	MLA-007							Y						Y																								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y										
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y			Y		Y							Y				Y						Y				Y									Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007				Y		Y											Y						Y				Y										
OC Pesticides		SGS AXYS MLA-228	MLA-228				Y		Y						Y	Y				Y		Y				Y				Y								Y	Y	
OC Pesticides	2,4'-DDT	EPA 625	MLA-007																											Y									
OC Pesticides		EPA 8270E	MLA-007							Y						Y																								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y										
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y			Y		Y							Y				Y						Y				Y									Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007				Y		Y											Y						Y				Y										
OC Pesticides		SGS AXYS MLA-228	MLA-228				Y		Y						Y	Y				Y		Y				Y				Y								Y	Y	
OC Pesticides	4,4'-DDD	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y										
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y			Y		Y							Y				Y						Y				Y									Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007				Y		Y											Y						Y				Y										
OC Pesticides		SGS AXYS MLA-228	MLA-228				Y		Y						Y	Y				Y		Y				Y				Y								Y	Y	
OC Pesticides	4,4'-DDE	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y										
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y			Y		Y							Y				Y						Y				Y									Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007				Y		Y											Y						Y				Y										
OC Pesticides		SGS AXYS MLA-228	MLA-228				Y		Y						Y	Y				Y		Y				Y				Y								Y	Y	
OC Pesticides	4,4'-DDT	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y										
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y			Y		Y							Y				Y						Y				Y									Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007				Y		Y											Y						Y				Y										
OC Pesticides		SGS AXYS MLA-228	MLA-228				Y		Y						Y	Y				Y		Y				Y				Y								Y	Y	
OC Pesticides	Aldrin	EPA 625	MLA-007																										Y	Y	Y			Y		Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Alpha-HCH	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Beta-HCH	EPA 625	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Chlordane, technical	EPA 8270E	MLA-007							Y	Y			Y	Y															Y	Y			Y		Y		
OC Pesticides		SGS AXYS MLA-007	MLA-007							Y																				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228																											Y								
OC Pesticides	cis-Chlordane (alpha-Chlordane)	EPA 8270E	MLA-007							Y	Y			Y		Y														Y	Y			Y				
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	cis-Nonachlor	EPA 8270E	MLA-007							Y						Y														Y								
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Delta-HCH	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Dieldrin	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Endosulphan I	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Endosulphan II	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Endosulphan sulphate	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y									Y							Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y						Y				Y								
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y			Y		Y				Y						Y	Y	
OC Pesticides	Endrin	EPA 608	MLA-007																										Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y								

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine		Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Endrin aldehyde	EPA 608	MLA-007																									Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Endrin ketone	EPA 8081B	MLA-007						Y	Y				Y		Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Gamma-HCH (Lindane)	EPA 625	MLA-007																									Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Heptachlor	EPA 625	MLA-007																									Y	Y	Y			Y		Y		
OC Pesticides		EPA 8270E	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Heptachlor epoxide	EPA 608	MLA-007																									Y	Y	Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Hexachlorobenzene	EPA 1625	MLA-007																									Y	Y				Y				
OC Pesticides		EPA 8270E	MLA-007							Y	Y				Y	Y																		Y				
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y						Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228							Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Methoxychlor	EPA 608	MLA-007																											Y			Y		Y		
OC Pesticides		EPA 8081B	MLA-007						Y	Y	Y			Y	Y	Y																					
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Mirex	EPA 8270E	MLA-007							Y				Y		Y														Y	Y		Y		Y		
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Oxychlordane	EPA 8270E	MLA-007							Y																											
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	Toxaphene	EPA 8270E	MLA-007																																		
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
OC Pesticides	trans-Chlordane (gamma-Chlordane)	EPA 8270E	MLA-007							Y	Y			Y		Y														Y	Y			Y				
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y			Y	Y					Y						Y						Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y						Y							
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y			Y	Y			Y		Y						Y					Y	Y	
OC Pesticides	trans-Nonachlor	EPA 8270E	MLA-007							Y						Y														Y							
OC Pesticides		EPA 1699	MLA-028							Y										Y										Y							

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
OC Pesticides		SGS AXYS MLA-028	MLA-028	Y				Y		Y						Y				Y	Y				Y												Y	
OC Pesticides		SGS AXYS MLA-007	MLA-007					Y		Y										Y																		
OC Pesticides		SGS AXYS MLA-228	MLA-228					Y		Y					Y	Y				Y	Y		Y		Y											Y	Y		
Fluoride	Fluoride	EPA 1621	MLA-119																										Y	Y								
	Fluoride	SGS AXYS MLA-119 AOF	MLA-119																											Y								
		SGS AXYS MLA-119 EOF	MLA-119							Y																				Y								
	Fluoride	SGS AXYS MLA-119 TF	MLA-119							Y																				Y								
PAH	"Extractable Organics" category (CA only)	EPA 8270E	MLA-021						Y																													
PAH	"Semi-volatile Organic Compounds" category (CA only)	EPA 1625	MLA-021																																			
PAH	1,2,6-Trimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1,2-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1,4,6,7-Tetramethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1,7-Dimethylfluorene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1,7-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1,8-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1-Methylchrysene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1-Methylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	1-Methylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2,3,5-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2,3,6-Trimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2,4-Dimethyldibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2,6-Dimethylnaphthalene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2-Methylanthracene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2-Methylfluorene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	2-Methylnaphthalene	EPA 8270E	MLA-021							Y											Y										Y				Y				
PAH		SGS AXYS MLA-021	MLA-021					Y							Y	Y				Y	Y			Y	Y						Y					Y		
PAH	2-Methylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	3,6-Dimethylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	3-Methyldibenzothiophene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	3-Methylfluoranthene/ Benzo(a)fluorene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	3-Methylphenanthrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	5,9-Dimethylchrysene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	5/6-Methylchrysenes	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	7-Methylbenzo(a)pyrene	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	9/4-Methylphenanthrenes	SGS AXYS MLA-021	MLA-021					Y																	Y													
PAH	Acenaphthene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y	Y						Y					Y		
PAH	Acenaphthylene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y	Y						Y					Y		
PAH	Anthracene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y	Y						Y					Y		
PAH	Benz[a]anthracene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y	Y						Y					Y		
PAH	Benzo[a]pyrene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y	Y						Y					Y		
PAH	Benzo[b]fluoranthene	EPA 1625	MLA-021																										Y	Y	Y			Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y	Y						Y					Y		
PAH	Benzo[e]pyrene	SGS AXYS MLA-021	MLA-021					Y													Y				Y													
PAH	Benzo[ghi]perylene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y		Y	Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021					Y		Y					Y	Y				Y	Y			Y	Y						Y					Y		
PAH	Benzo[j/k]fluoranthenes	SGS AXYS MLA-021	MLA-021					Y													Y				Y													
PAH	Benzo[k]fluoranthene	EPA 1625	MLA-021																										Y	Y	Y			Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y	Y			Y							Y																	
PAH		SGS AXYS MLA-021	MLA-021							Y					Y	Y				Y	Y			Y	Y						Y					Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora							Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PAH	Biphenyl	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Acenaphthenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Benz(a)anthracenes/chrysenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Biphenyls	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Dibenzothiophene	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Fluorenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Naphthalenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C1-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Biphenyls	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Dibenzothiophene	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Fluorenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Naphthalenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C2-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C3-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C3-Dibenzothiophene	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C3-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C3-Fluorenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C3-Naphthalenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C3-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C4-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C4-Dibenzothiophene	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C4-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C4-Naphthalenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	C4-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021				Y																	Y													
PAH	Chrysene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021					Y	Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Dibenzo[a,h]anthracene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021					Y	Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Dibenzothiophene	SGS AXYS MLA-021	MLA-021				Y																		Y													
PAH	Fluoranthene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021					Y	Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Fluorene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021					Y	Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Indeno[1,2,3-cd]pyrene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Naphthalene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021					Y	Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Perylene	SGS AXYS MLA-021	MLA-021				Y												Y						Y													
PAH	Phenanthrene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021					Y	Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Pyrene	EPA 1625	MLA-021																										Y	Y				Y		Y		
PAH		EPA 8270E	MLA-021						Y	Y			Y	Y						Y																		
PAH		SGS AXYS MLA-021	MLA-021				Y		Y						Y	Y			Y	Y			Y		Y					Y						Y		
PAH	Retene	SGS AXYS MLA-021	MLA-021				Y																		Y													
PBDPE	BDE 10 2,6-dibromodiphenylether	EPA 1614	MLA-033													Y																					Y	
PBDPE		SGS AXYS MLA-033	MLA-033				Y												Y						Y													
PBDPE	BDE 100 2,2',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033													Y																					Y	
PBDPE		SGS AXYS MLA-033	MLA-033				Y												Y						Y													
PBDPE	BDE 105 2,3,3',4,4'-pentabromodiphenylether	EPA 1614	MLA-033													Y																					Y	
PBDPE		SGS AXYS MLA-033	MLA-033				Y												Y						Y													
PBDPE	BDE 11 3,3'-dibromodiphenylether	EPA 1614	MLA-033													Y																					Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora										Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 116 2,3,4,5,6-pentabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 119 2,3',4,4',6-pentabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 12 3,4-dibromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 126 3,3',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 13 3,4'-dibromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 140 2,2',3,4,4',6'-hexabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 15 4,4'-dibromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 153 2,2',4,4',5,5'-hexabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 154 2,2',4,4',5',6-hexabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 155 2,2',4,4',6,6'-hexabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 166 2,3,4,4',5,6-hexabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 17 2,2',4-tribromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 181 2,2',3,4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 183 2,2',3,4,4',5',6-heptabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 190 2,3,3',4,4',5,6-heptabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 206 2,2',3,3',4,4',5,5',6-nonabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 207 2,2',3,3',4,4',5,6,6'-nonabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 208 2,2',3,3',4,5,5',6,6'-nonabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 209 Decabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 25 2,3',4-tribromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 28 2,4,4'-tribromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 30 2,4,6-tribromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 33 2',3,4-tribromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 35 3,3',4-tribromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 37 3,4,4'-tribromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 47 2,2',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 49 2,2',4,5'-tetrabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 66 2,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 7 2,4-dibromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 75 2,4,4',6-tetrabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													
PBDPE	BDE 77 3,3',4,4'-tetrabromodiphenylether	EPA 1614	MLA-033												Y																					Y		
PBDPE		SGS AXYS MLA-033	MLA-033				Y											Y							Y													

Accreditation Scope

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				Serum	Solids											Tissue and Tissue Flora							Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PBDPE	BDE 8 2,4'-dibromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y											Y						Y													
PBDPE	BDE 85 2,2',3,4,4'-pentabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y											Y						Y													
PBDPE	BDE 99 2,2',4,4',5-pentabromodiphenylether	EPA 1614	MLA-033													Y																				Y		
PBDPE		SGS AXYS MLA-033	MLA-033					Y											Y						Y													
PCB Aroclors	"Organochlorine Pesticides and PCBs" category (CA only)	EPA 625	MLA-007																																			
PCB Aroclors	"PCBs" category (CA only)	EPA 8270E	MLA-007						Y																													
PCB Aroclors	PCB Aroclor 1016	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1016/1242	EPA 8270E	MLA-007																																			
PCB Aroclors	PCB Aroclor 1221	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1232	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1242	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1248	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1254	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1260	EPA 1668	MLA-010							Y	Y																				Y	Y						
PCB Aroclors		EPA 625	MLA-007																										Y	Y	Y			Y		Y		
PCB Aroclors		EPA 8270E	MLA-007						Y	Y					Y																			Y				
PCB Aroclors		SGS AXYS MLA-010	MLA-010							Y																				Y								
PCB Aroclors		SGS AXYS MLA-007	MLA-007					Y		Y									Y						Y					Y								
PCB Aroclors	PCB Aroclor 1268	SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 1 2-Chlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y								Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 10 2,6-Dichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y								Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 100 2,2',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y								Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 101 2,2',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y						Y								Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 101/90/89	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 102 2,2',4,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 103 2,2',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 104 2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 105 2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 105/127	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 106 2,3,3',4,5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 107 2,3,3',4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 107/109	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 108 2,3,3',4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 109 2,3,3',4,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 11 3,3'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y						Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y									Y								
PCB congeners	PCB 110 2,3,3',4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y	Y				Y					Y							Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 111 2,3,3',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 111/117	EPA 8270E	MLA-007																																			
PCB congeners	PCB 112 2,3,3',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 113 2,3,3',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 114 2,3,4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 115 2,3,4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 116 2,3,4,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 117 2,3,4',5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 118 2,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 118/106	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 119 2,3',4,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 12 3,4-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 12/13	EPA 8270E	MLA-007																																			
PCB congeners	PCB 120 2,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								

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				Serum	Solids											Tissue and Tissue Flora						Urine		Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 121 2,3',4,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 122 2,3,3',4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 123 2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-908	MLA-908							Y						Y				Y			Y							Y							Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 124 2,3',4',5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 125 2,3',4',5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y			Y	Y					Y					Y							Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y						Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 126 3,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 127 3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 128 2,2',3,3',4,4'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 129 2,2',3,3',4,5-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 13 3,4'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y					Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners	PCB 130 2,2',3,3',4,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 131 2,2',3,3',4,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 132 2,2',3,3',4,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 132/168	EPA 8270E	MLA-007																																				
PCB congeners	PCB 133 2,2',3,3',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 134 2,2',3,3',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 134/143	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 135 2,2',3,3',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 136 2,2',3,3',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 137 2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 138 2,2',3,4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 138/163/164	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 139 2,2',3,4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 14 3,5-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 140 2,2',3,4,4',6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 141 2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y		Y									Y					Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 142 2,2',3,4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 143 2,2',3,4,5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 144 2,2',3,4,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 144/135	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y															
PCB congeners	PCB 145 2,2',3,4,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 146 2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 147 2,2',3,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 148 2,2',3,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y				Y						Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y							Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 149 2,2',3,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine		Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 149/139	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 15 4,4'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 150 2,2',3,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 151 2,2',3,5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 152 2,2',3,5,6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 153 2,2',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 154 2,2',4,4',5,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 155 2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 156 2,3,3',4,4',5-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 157 2,3,3',4,4',5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y										Y				Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine		Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 158 2,3,3',4,4',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 158/160	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 159 2,3,3',4,5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007																						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 16 2,2',3-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 16/32	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 160 2,3,3',4,5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 161 2,3,3',4,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 162 2,3,3',4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 163 2,3,3',4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 164 2,3,3',4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 165 2,3,3',5,5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 166 2,3,4,4',5,6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 167 2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 168 2,3',4,4',5',6-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 169 3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y																			
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 17 2,2',4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 170 2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 170/190	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 171 2,2',3,3',4,4',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 172 2,2',3,3',4,5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 172/192	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 173 2,2',3,3',4,5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 174 2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 174/181	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 175 2,2',3,3',4,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine		Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 176 2,2',3,3',4,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 177 2,2',3,3',4,5',6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 178 2,2',3,3',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 179 2,2',3,3',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 18 2,2',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 180 2,2',3,4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 181 2,2',3,4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 182 2,2',3,4,4',5,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 183 2,2',3,4,4',5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 184 2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 185 2,2',3,4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 186 2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 187 2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 187/182	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 188 2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 19 2,2',6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 190 2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 191 2,3,3',4,4',5,6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 192 2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y									Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y											Y								
PCB congeners	PCB 193 2,3,3',4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y									Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			

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SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora						Urine		Water, Non-Potable													AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 196 2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 196/203	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners	PCB 197 2,2',3,3',4,4',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 198 2,2',3,3',4,5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 2 3-Chlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 20 2,3,3'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y											Y									Y									
PCB congeners	PCB 200 2,2',3,3',4,5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y					Y				Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y							Y			Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora											Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 201 2,2',3,3',4,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 202 2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 203 2,2',3,4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 204 2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 207 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 209 Decachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																					
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y															
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 21 2,3,4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y										
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 22 2,3,4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 23 2,3,5-Trichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 24/27	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 25 2,3',4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 26 2,3',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 27 2,3',6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 28 2,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 29 2,4,5-Trichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 3 4-Chlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y										
PCB congeners	PCB 30 2,4,6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y						Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 31 2,4',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 32 2,4',6-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 33 2,3',4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 34 2,3',5'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 35 3,3',4-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 36 3,3',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 37 3,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 38 3,4,5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 39 3,4',5-Trichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 4 2,2'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y			Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 4/10	EPA 8270E	MLA-007																																				
PCB congeners	PCB 40 2,2',3,3'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				

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SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 41 2,2',3,4-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 41/71/64/68	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 42 2,2',3,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 42/59	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 43 2,2',3,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 44 2,2',3,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 45 2,2',3,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 46 2,2',3,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 47 2,2',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 47/48/75	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y					Y													
PCB congeners	PCB 48 2,2',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 49 2,2',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y					Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y										Y	Y				Y						Y							
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y					Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y											Y										Y								
PCB congeners	PCB 49/43	EPA 8270E	MLA-007																																			

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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids											Tissue and Tissue Flora						Urine		Water, Non-Potable													AFFF	
				CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-007	MLA-007															Y						Y														
PCB congeners	PCB 5 2,3-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 50 2,2',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 51 2,2',4,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 52 2,2',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 52/73	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 53 2,2',5,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 54 2,2',6,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 55 2,3,3',4-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 56 2,3,3',4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 56/60	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 57 2,3,3',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 58 2,3,3',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 59 2,3,3',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y							Y	Y		Y	Y	Y	Y	Y		

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora											Urine		Water	Water, Non-Potable													AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 6 2,3'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 60 2,3,4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 61 2,3,4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 62 2,3,4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 62/65	EPA 8270E	MLA-007																																						
PCB congeners	PCB 63 2,3,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 64 2,3,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 65 2,3,5,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y	Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 66 2,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 66/80	EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-007	MLA-007					Y												Y							Y															
PCB congeners	PCB 67 2,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 68 2,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y								Y				Y	Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y											Y											
PCB congeners	PCB 69 2,3',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y								Y	Y		Y	Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																						
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y						Y					Y											

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SGS AXYS Analytical Services Ltd.
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				Serum	Solids											Tissue and Tissue Flora							Urine		Water, Non-Potable														AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y									
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 7 2,4-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 7/9	EPA 8270E	MLA-007																																				
PCB congeners	PCB 70 2,3',4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 70/76	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 71 2,3',4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 72 2,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 73 2,3',5',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 74 2,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 74/61	EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners	PCB 75 2,4,4',6-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 76 2,3',4',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 77 3,3',4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 78 3,3',4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		
PCB congeners		EPA 8270E	MLA-007																																				
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y									
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y									
PCB congeners	PCB 79 3,3',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y			Y	Y	Y	Y		

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				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y					Y		Y								Y						Y		
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 8 2,4'-Dichlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 8/5	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 80 3,3',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 81 3,4,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 82 2,2',3,3',4-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 83 2,2',3,3',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 83/108	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 84 2,2',3,3',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 85 2,2',3,4,4'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 85/120	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 86 2,2',3,4,5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 87 2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 87/115/116	EPA 8270E	MLA-007																																		
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 88 2,2',3,4,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y		Y								Y	Y		Y	Y	Y	Y	Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 88/121	EPA 8270E	MLA-007																																			
PCB congeners	PCB 89 2,2',3,4,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y	Y		Y	Y	Y	Y				Y			Y							Y	Y		Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 9 2,5-Dichlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 90 2,2',3,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 91 2,2',3,4',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 92 2,2',3,5,5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 93 2,2',3,5,6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 94 2,2',3,5,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 95 2,2',3,5',6-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 95/93	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 96 2,2',3,6,6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 97 2,2',3,4',5'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 97/86	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													
PCB congeners	PCB 98 2,2',3,4',6'-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB 98/102	EPA 8270E	MLA-007																																			
PCB congeners	PCB 99 2,2',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010							Y			Y	Y	Y	Y				Y			Y							Y				Y	Y	Y	Y	Y	
PCB congeners		EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y		Y									Y	Y					Y					Y								
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y						Y													

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SGS AXYS Analytical Services Ltd.
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Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum	Solids											Tissue and Tissue Flora						Urine	Water	Water, Non-Potable											AFFF	
				CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCB congeners		SGS AXYS MLA-210	MLA-210					Y		Y						Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		EPA 1628	MLA-908							Y										Y										Y								
PCB congeners	PCB congeners, total	EPA 1668	MLA-010											Y																				Y				
PCB congeners	PCBs, as congeners	EPA 1668	MLA-010																	Y																		
PCB congeners		SGS AXYS MLA-010	MLA-010																	Y																		
PCB congeners		SGS AXYS MLA-210	MLA-210							Y										Y										Y								
PCB congeners		SGS AXYS MLA-908	MLA-908							Y										Y										Y								
PCB congeners	Total Dichlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Heptachlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Hexachlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Monochlorobiphenyls	SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Nonachlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Octachlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Pentachlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Polychlorinated biphenyls	SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners	Total Tetrachlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners	Total Trichlorobiphenyls	EPA 8270E	MLA-007																																			
PCB congeners		SGS AXYS MLA-010	MLA-010	Y				Y											Y					Y														
PCB congeners		SGS AXYS MLA-007	MLA-007					Y											Y					Y														
PCB congeners		SGS AXYS MLA-210	MLA-210					Y								Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCB congeners		SGS AXYS MLA-908	MLA-908							Y					Y	Y				Y		Y								Y			Y	Y	Y	Y	Y	
PCDDF	"Dioxins and Dibenzofurans" category (CA only)	EPA 1613	MLA-017																																			
PCDDF		EPA 8290A	MLA-017																																			
PCDDF	1,2,3,4,6,7,8-HpCDD	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y	
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y			Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y									Y	Y				Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y			Y	Y		Y	Y	Y		Y				Y				Y			Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y										Y								
PCDDF	1,2,3,4,6,7,8-HpCDF	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y	
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y			Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y									Y	Y				Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y			Y	Y		Y	Y	Y		Y				Y				Y			Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y										Y								
PCDDF	1,2,3,4,7,8,9-HpCDF	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y	
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y			Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y									Y	Y				Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y			Y	Y		Y	Y	Y		Y				Y				Y			Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y										Y								
PCDDF	1,2,3,4,7,8-HxCDD	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y	
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y			Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y									Y	Y				Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y			Y	Y		Y	Y	Y		Y				Y				Y			Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y										Y								
PCDDF	1,2,3,4,7,8-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y						Y				Y	Y	Y		Y	Y		Y	Y	
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y			Y				Y				Y			Y		
PCDDF		SGS AXYS MLA-017	MLA-017	Y				Y		Y									Y	Y				Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217					Y		Y						Y			Y	Y		Y	Y	Y		Y				Y				Y			Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y										Y								

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids										Tissue and Tissue Flora						Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCDDF	1,2,3,6,7,8-HxCDD	EPA 1613	MLA-017		Y					Y					Y					Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,6,7,8-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y	Y	
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8,9-HxCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8,9-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8-PeCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	1,2,3,7,8-PeCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,4,6,7,8-HxCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,4,7,8-PeCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,7,8-TCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	2,3,7,8-TCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	OCDD	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	OCDF	EPA 1613	MLA-017		Y					Y						Y				Y							Y			Y	Y	Y		Y	Y	Y		
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y	Y	Y					Y		Y	Y				Y				Y				Y				
PCDDF		SGS AXYS MLA-017	MLA-017	Y			Y			Y									Y	Y					Y						Y								
PCDDF		SGS AXYS MLA-217	MLA-217				Y			Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HpCDD	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HpCDF	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HxCDD	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								
PCDDF	Total HxCDF	EPA 1613	MLA-017		Y					Y										Y							Y			Y	Y	Y						
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y				Y				Y							Y	
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y											Y								
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y				Y	Y		Y	Y		Y	Y					Y				Y		Y	Y	
PCDDF		ATM 16130	MLA-217							Y										Y											Y								

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora							Urine		Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PCDDF	Total PCDD	EPA 1613	MLA-017		Y																					Y												
PCDDF		EPA 8290A	MLA-017		Y																					Y												
PCDDF	Total PCDD/F	EPA 1613	MLA-017		Y																					Y												
PCDDF		EPA 8290A	MLA-017		Y																					Y												
PCDDF	Total PCDF	EPA 1613	MLA-017		Y																					Y												
PCDDF		EPA 8290A	MLA-017		Y																					Y												
PCDDF	Total PeCDD	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PCDDF	Total PeCDF	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PCDDF	Total TCDD	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PCDDF	Total TCDF	EPA 1613	MLA-017		Y					Y										Y						Y			Y	Y	Y							
PCDDF		EPA 8290A	MLA-017		Y					Y	Y		Y		Y					Y		Y	Y			Y			Y						Y			
PCDDF		SGS AXYS MLA-017	MLA-017							Y										Y									Y									
PCDDF		SGS AXYS MLA-217	MLA-217							Y					Y					Y		Y	Y			Y			Y					Y		Y		
PCDDF		ATM 16130	MLA-217							Y										Y									Y									
PFAS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y										Y	Y										Y	Y								Y	Y
PFAS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	SGS AXYS MLA-110	MLA-110	Y				Y											Y						Y												
PFAS	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11-Cl-PF3OUdS)	SGS AXYS MLA-110	MLA-110			Y				Y							Y			Y								Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y							Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y	Y	Y	Y			Y	Y	Y		Y		Y	Y			Y	Y		Y	Y		Y	Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	SGS AXYS MLA-110	MLA-110			Y				Y		Y					Y			Y	Y						Y			Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y							Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y					Y		Y	Y	Y	Y	Y			Y	Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	4,8-dioxa-3H-perfluorononanoate (ADONA)	SGS AXYS MLA-110	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS		DoD QSM Version 5.3	MLA-110			Y											Y										Y	Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y											Y										Y									Y	
PFAS		EPA 1633	MLA-110							Y					Y					Y				Y						Y					Y			
PFAS		EPA 1633 draft	MLA-110			Y											Y										Y									Y	
PFAS	4:2 Fluorotelomersulfonate (4:2 FTS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y							Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y	Y	Y	Y			Y	Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	6:2 Fluorotelomersulfonate (6:2 FTS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y							Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y	Y	Y	Y			Y	Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	8:2 Fluorotelomersulfonate (8:2 FTS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y							Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y	Y	Y	Y			Y	Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y										Y	Y									Y	Y								Y	Y
PFAS	9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	SGS AXYS MLA-110	MLA-110	Y				Y											Y						Y												
PFAS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9-Cl-PF3ONS)	SGS AXYS MLA-110	MLA-110			Y				Y							Y			Y								Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y							Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y	Y	Y	Y			Y	Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	Dodecafluoro-3H-4,8-dioxanonanoate (NaDONA)	SGS AXYS MLA-110	MLA-110	Y				Y											Y						Y												
		EPA 1633 draft	MLA-110									Y										Y											Y					
PFAS	Hexafluoropropylene oxide dimer acid (HFPO-DA)	SGS AXYS MLA-110	MLA-110	Y		Y		Y									Y			Y					Y		Y									Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y							Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y	Y	Y	Y			Y	Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	Hexafluoropropylene oxide dimer acid, anion and acid (HFPO-DA)	SGS AXYS MLA-110	MLA-110			Y	Y										Y	Y									Y	Y								Y	Y
PFAS	Hexaflurorpropylene oxide dimer acid (HFPO-DA)	SGS AXYS MLA-110	MLA-110	Y						Y										Y											Y						
PFAS	N-Ethylperfluorooctane sulfonamide (EtFOSAm)	SGS AXYS MLA-110	MLA-110							Y										Y											Y						
PFAS		DoD QSM Version 5.3	MLA-110						Y																					Y								
PFAS		DoD QSM Version 5.4	MLA-110						Y																					Y								

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file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora							Urine		Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PFAS		EPA 1633	MLA-110									Y									Y									Y								
PFAS		EPA 1633 draft	MLA-110																																			
PFAS	N-Ethylperfluorooctanesulfonamide (N-EtFOSA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y									Y	Y	Y						Y		Y	Y									Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y											Y									Y	Y										Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y					Y	Y				Y			Y			Y			Y	Y						Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Ethylperfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Ethylperfluorooctanesulfonamidoethanol (N-EtFOSE)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Methylperfluorooctanesulfonamide (N-MeFOSA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Methylperfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perflurorobutane Sulfonate (PFBS)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorobutanoate (PFBA)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorodecanoate (PFDA)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y		Y	Y					Y		Y			Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	Y
PFAS		DoD QSM Version 5.3	MLA-110			Y											Y										Y										Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y			Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-042	MLA-042	Y																																		
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y							Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y			Y								Y									Y	Y		Y								Y	
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y								Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y			Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y

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				Serum	Solids											Tissue and Tissue Flora							Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PFAS	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorononanoate (PFNA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorooctanesulfonamide (PFOSA), a.k.a. FOSA	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y			Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS		DoD AFFF01 Rev 1.0	MLA-110										Y																							Y	Y
PFAS	Perfluorooctanoate (PFOA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS		DoD AFFF01 Rev 1.0	MLA-110																																	Y	Y
PFAS	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y							Y	Y	Y	Y	Y							Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y							Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y				Y			Y	Y		Y	Y		Y	Y	Y
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y										Y	Y							Y	Y
PFAS	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-042	MLA-042	Y																																
PFAS		SGS AXYS MLA-110	MLA-110	Y		Y		Y		Y							Y	Y	Y	Y					Y		Y	Y		Y						Y	

Accreditation Scope

SGS AXYS Analytical Services Ltd.
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				Serum	Solids										Tissue and Tissue Flora							Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y		Y								Y	Y								Y	Y	Y	Y								Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y		Y								Y	Y									Y	Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	4,4,5,5,6,6,6-heptafluorohexanoic acid (3:3 FTCA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y				Y		Y	Y		Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	2H,2H,3H,3H-perfluorooctanoic acid (5:3 FTCA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y				Y		Y	Y		Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	2H,2H,3H,3H-perfluorodecanoic acid (7:3 FTCA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y				Y		Y	Y		Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoro-3-methoxypropanoic acid (PFMPA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y				Y		Y	Y		Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoro-4-methoxybutanoic acid (PFMBA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y				Y		Y	Y		Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y				Y		Y	Y		Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	SGS AXYS MLA-110	MLA-110	Y		Y	Y	Y		Y							Y	Y	Y	Y				Y		Y	Y		Y								Y	
PFAS		DoD QSM Version 5.3	MLA-110		Y	Y	Y										Y	Y								Y	Y	Y									Y	Y
PFAS		DoD QSM Version 5.4	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PFAS		EPA 1633	MLA-110		Y			Y		Y		Y	Y		Y	Y				Y	Y		Y			Y			Y	Y		Y	Y		Y	Y	Y		
PFAS		EPA 1633 draft	MLA-110			Y	Y										Y	Y									Y	Y									Y	Y
PPCP	1,7-Dimethylxanthine	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	10-hydroxy-amitriptyline	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	2-hydroxy-ibuprofen	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	4-Epianhydrochlortetracycline (EACTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	4-Epianhydrotetracycline (EATC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	4-Epichlortetracycline (ECTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	4-Epioxytetracycline (EOTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	4-Epitetracycline (ETC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Acetaminophen	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Albuterol	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Alprazolam	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Amitriptyline	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Amlodipine	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Amphetamine	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Anhydrochlortetracycline (ACTC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Anhydrotetracycline (ATC)	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Atenolol	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Atorvastatin	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Azithromycin	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Benzoylecgonine	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Benztropine	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Betamethasone	SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Bisphenol A	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Caffeine	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Carbadox	EPA 1694	MLA-075								Y																				Y							
PPCP		SGS AXYS MLA-075	MLA-075						Y																Y													
PPCP	Carbamazepine	EPA 1694	MLA-075								Y																				Y							

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				Serum	Solids											Tissue and Tissue Flora									Urine	Water	Water, Non-Potable										AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cefotaxime	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Chlortetracycline (CTC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cimetidine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Ciprofloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Clarithromycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Clinafloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Clonidine	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cloxacillin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cocaine	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Codeine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Cotinine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	DEET (N,N-diethyl-m-toluamide)	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Dehydronifedipine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Demeclocycline	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Desmethyldiltiazem	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Diazepam	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Digoxigenin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Digoxin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Diltiazem	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Diphenhydramine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Doxycycline	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Enalapril	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Enrofloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Erythromycin	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Erythromycin anydrate	EPA 1694	MLA-075								Y																				Y						
PPCP	Flumequine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Fluocinonide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Fluoxetine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Fluticasone propionate	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Furosemide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Gemfibrozil	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Glipizide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Glyburide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Hydrochlorothiazide	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Hydrocodone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Hydrocortisone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Ibuprofen	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Isochlortetracycline (ICTC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Lincomycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Lomefloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Meprobamate	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Metformin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Methylprednisolone	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Metoprolol	SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Miconazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Minocycline	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Naproxen	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												
PPCP	Norfloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																		Y												

Accreditation Scope

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				Serum	Solids											Tissue and Tissue Flora							Urine	Water	Water, Non-Potable											AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
PPCP	Norfluoxetine	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Norgestimate	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Norverapamil	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Ofloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Ormetoprim	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Oxacillin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Oxolinic acid	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Oxycodone	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Oxytetracycline (OTC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Paroxetine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Penicillin G	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Penicillin V	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Prednisolone	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Prednisone	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Promethazine	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Propoxyphene	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Propranolol	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Ranitidine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Roxithromycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sarafloxacin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sertraline	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Simvastatin	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfachloropyridazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfadiazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfadimethoxine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfamerazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfamethazine	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfamethizole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfamethoxazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfanilamide	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Sulfathiazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Tetracycline (TC)	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Theophylline	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Thiabendazole	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Trenbolone	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Trenbolone acetate	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Triamterene	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Triclocarban	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Triclosan	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Trimethoprim	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Tylosin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Valsartan	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Verapamil	SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Virginiamycin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
PPCP	Warfarin	EPA 1694	MLA-075								Y																				Y						
PPCP		SGS AXYS MLA-075	MLA-075				Y																	Y													
TOP	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-111	MLA-111				Y																	Y													
TOP	Perfluorobutanoate (PFBA)	SGS AXYS MLA-111	MLA-111				Y																	Y													
TOP	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-111	MLA-111				Y																	Y													
TOP	Perfluorodecanoate (PFDA)	SGS AXYS MLA-111	MLA-111				Y																	Y													

Accreditation Scope

SGS AXYS Analytical Services Ltd.
file ref.: ACC-103 Rev. 76

				Serum	Solids											Tissue and Tissue Flora									Urine	Water	Water, Non-Potable												AFFF	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	CALA	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	ANAB DoD/DOE **	ANAB ISO 17025	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	CALA	CALA	Alaska DEC	ANAB DoD/DOE **	ANAB ISO 17025	California WB	Florida DOH	Maine DOH	Minnesota DOH	New Jersey DEP	New York DOH	Pennsylvania DEP	Virginia DGS	Washington DE *	ANAB DoD/DOE **	ANAB ISO 17025
TOP	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorononanoate (PFNA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorooctanoate (PFOA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
TOP	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-111	MLA-111					Y																	Y													
AO	6PPD-Quinone	SGS AXYS MLA-118	MLA-118																						Y													

Note * Analysis of pesticides and PCBs in non-potable water samples by SGS AXYS method MLA-007, with the exception of NPDES or State permitted discharges and Stormwater applications, may fall within the scope of Washington State Department of Ecology solids matrix accreditation, subject to approval of the Ecology Project Manager.

Note ** PFAS by LC-MS/MS compliant with US DoD QSM 5.3 table B-15; US DoD/DOE QSM 5.4 and 6.0 table B-24

Legend

Y	Accreditation scope
AFFF	Aqueous film forming foam
AO	Antiozonants
BFR	Brominated flame retardants (non-PBDPE)
BPA and mPE	Bisphenol A and mono-Phthalate Esters
OC Pesticides	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PBDPE	Polybrominated diphenylethers
PCB	Polychlorinated Biphenyls
PCDDF	Polychlorinated dibenzodioxins/furans
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceutical and Personal Care Products
TOP	Total Oxidizable Precursors
California WB	California Water Boards, Lab ID 2911
Florida DOH	Florida Department of Health, Lab ID E871007, (NELAC Standard)
Pennsylvania DEP	Pennsylvania Department of Environmental Protection
Minnesota DOH	Minnesota Department of Health, Lab ID 232-999-430, (NELAC Standard)
New Jersey DEP	New Jersey Department of Environmental Protection, Lab ID CANA005, (NELAC Standard)
New York DOH	New York Department of Health, Lab ID 11674, (NELAC Standard)
Washington DE	Washington Department of Ecology, Lab ID C404
Virginia DGS	Virginia Department of General Services, Division of Consolidated Laboratory Services, Lab ID 460224, (NELAC Standard)
Alaska DEC	Alaska Department of Environmental Conservation, Contaminated Sites Laboratory Approval 17-014
Maine DOH	Maine Center for Disease Control and Prevention, Department of Health and Human Services, Lab ID CN00003
ANAB DoD	ANSI National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.3, 5.4, US DoD/DOE QSM 6.0 Standard)
CALA	Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2017 Standard)

ANAB ACCREDITED ISO/IEC 17025 DOD ELAP Certificate ADE-1861

ilac-MRA

ilac-MRA

CALA Testing Accreditation No. A2637